

# HUMAN DEVELOPMENT REPORT 2017

## TELANGANA STATE



Centre for  
Economic and Social Studies



Government of Telangana  
Planning Department

# Human Development Report 2017 Telangana State

S. Galab  
C. Ravi  
E. Revathi  
N. Sreedevi  
P. Aparna



Centre for  
Economic and Social Studies



Government of Telangana  
Planning Department

---

Copy right © Government of Telangana and  
Centre for Economic and Social Studies, Hyderabad

First Published : **April 2017**

All rights reserved. This book or parts thereof, should  
not be produced in any form without permission.

*Designed & Printed by*  
**Vidya Graphics**  
Nallakunta, Hyderabad - 500 044.  
Cell: 9849151948



## CENTRE FOR ECONOMIC AND SOCIAL STUDIES

Nizamiah Observatory Campus, Begumpet, Hyderabad - 500 016, Telangana, India  
Phones: 040-23416610-13, 23402789, 23416780, Fax: 040-23406808,  
E-mail: post@cess.ac.in, Website: www.cess.ac.in



### Message

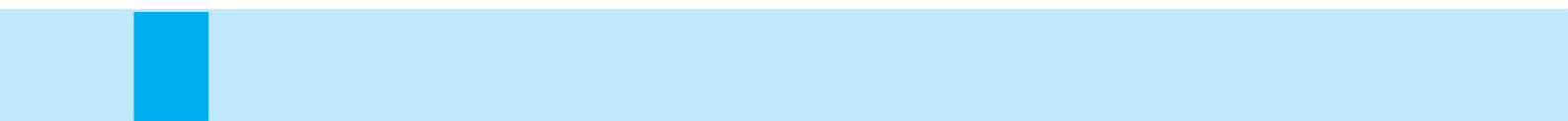
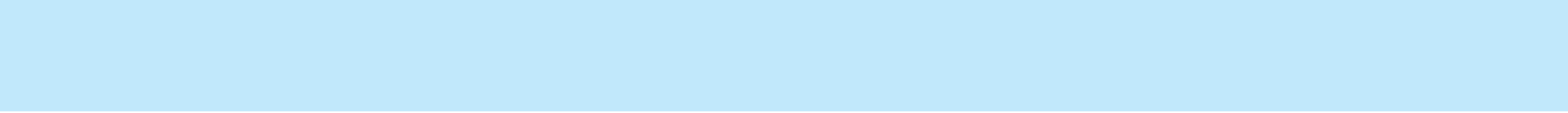
*Human Development Report 2017 for Telangana State completed by the CESS takes into account the findings for Telangana from its earlier study on Human Development Report 2007 for Andhra Pradesh, and carries the study forward through a comprehensive and in-depth analysis of the subsequent developments in Telangana including for the period after the formation of Telangana State.*

*The study reveals that there has been a decline in disparities in the levels of human development between different districts and social groups, but growth in per capita income has been more pronounced than the improvements in indicators on education and health, suggesting that economic growth has not been translated into commensurate development in social sectors, particularly for rural areas and for vulnerable sections of society, e.g., less developed areas, women, B.C.s, S.C.s, S.T.s, and minorities. The analysis of the linkages between economic growth and social development through the rise in purchasing power of the people as well as improved capacity of the government to invest, is interesting. Equally interesting is the analysis of the reverse relationship between social development and economic growth, among other things, through the rise in labour productivity. The Report emphasizes the importance of forest cover, soil moisture, irrigation, drinking water and sanitation for enhancing and sustaining human development.*

*The interface between policies, analysis of experiences and seeing the way ahead comes out clearly in the Report. I am sure, this study would be extremely useful for policy makers in Telangana, as it contains an in-depth as well as comprehensive analysis, district-wise, covering various dimensions - rural-urban, gender and other social groups. Researchers and public at large will find it equally illuminating and useful.*

**C.H.Hanumantha Rao**

Founder-Member and Hon.Professor, CESS





## CENTRE FOR ECONOMIC AND SOCIAL STUDIES

Nizamiah Observatory Campus, Begumpet, Hyderabad - 500 016, Telangana, India  
Phones: 040-23416610-13, 23402789, 23416780, Fax: 040-23406808,  
E-mail: post@cess.ac.in, Website: www.cess.ac.in

---



### Message

*Conventional measures are now known to be inadequate for understanding the link between economic indicators and well-being. The UNDP has therefore developed a people-centric Human Development Index to estimate real levels of well-being, which are used to measure and compare human development across countries and at sub-regional levels. The present report by CESS offers a disaggregated assessment of human development in Telangana State at the district level and even the sub-district level along with policy suggestions.*

**R. Radhakrishna**  
Chairman, CESS



Telangana became the 29<sup>th</sup> state of the Indian Union after the bifurcation of combined Andhra Pradesh. The desire for inclusive development through decentralized governance and for deepening and widening of the democratic functioning of the state, market and civil society to protect the rights of every citizen is the policy priority for the new state. The policy goals of the Government of Telangana broadly converge with the development paradigm of UNDP that human development is the expansion of people's freedom to live long, healthy and creative lives; to advance the other goals they have reason to value; and to engage actively in shaping development equitably and sustainably. The social structure in Telangana is highly skewed with socially marginalized sections (backward castes, scheduled castes, scheduled tribes and religious minority) which constitute 85 percent of the state population. Hence, a new social framework that allows inclusive and participatory development should be able to meet the aspirations of the people.

The report on human development in Telangana State is prepared by the Centre for Economic and Social Studies (CESS) at the invitation of the Planning Department, Government of Telangana. We are highly thankful to Sri. B.P. Acharya, Special Chief Secretary, Planning Department for giving us the opportunity for preparing this report.

This is the first Human Development Report for the state of Telangana. UNDP methodology has been used to compute Human Development Index (HDI) for the 10 districts of Telangana during 2004-05 and 2011-12 and projected for 2015-16.

This Report benchmarks the patterns of human development across districts, caste groups, gender groups, occupational groups, rural and urban areas in Telangana before the formation of Telangana State. This enables the State Government to monitor the progress of human development in the state. This Report has also brought out clearly the ways and means to bring improvements in human development and reduction in its inequalities. Telangana has improved its rank in HDI from 13 in 2004-05 to 10 in 2011-12 among the states in India. There were considerable improvements in HDI during this period among all the districts in Telangana. Inequalities in human development across social groups, rural-urban areas and hence across the districts have declined. However, the inequalities persist. Variations in the nature of growth, allocation of funds for social and economic services, functioning of education and health institutions and variations in deprivations in agriculture related natural resources are associated with the variations in levels, improvements and inequalities in human development of Telangana. The related policies of the Government of Telangana have the potential to address the concerns of human development.



# Preface

The constant support and guidance of our chairman Prof. R. Radhakrishna in the preparation of this report is gratefully acknowledged. We are highly thankful to Prof. C.H. Hanumantha Rao for his valuable comments and suggestions in shaping up this report. We are grateful to Prof. Y.K. Alagh, Prof. S. R. Hashim, Prof. Atul Sarma and Prof. Maria Saleth for their useful suggestions.

This report is the outcome of the collective effort of faculty members, C. Ravi, E. Revathi, N. Sreedevi and P. Aparna of CESS.

We thank Prof. K. Hanumantha Rao and Prof. P. Satya Sekhar for their support in drafting the chapters on education and health respectively. Dr. P. Prudhvikar Reddy is acknowledged for providing the data from Young Lives Study. Prof. Karimulla's support in providing the mandal-wise data regarding Natural Resource Deprivation Index has been valuable. The estimation of Natural Resource Deprivation Index by Dr. Brajraj Mishra is duly acknowledged. We thank Dr. P. Anjeneyulu for compiling the mandal-wise data on drinking water and sanitation facilities. Slicing and mapping the data across newly formed 31 districts by Smt. N. Gayathri is appreciated. Support extended in this regard by Ms. A. Madhuri is duly acknowledged.

Special thanks to Prof. Kanakalatha Mukund and Dr. G. Alivelu for editing the report and also for useful comments and suggestions.

The support extended by Sri. A. Sudarsana Reddy, Director, Planning Department; Sri. Narasimha Rao, Joint Director, Planning Department and Dr. Subrahmanyam, Director, Directorate of Economics and Statistics is acknowledged.

Special thanks to Sri. B. Sankara Reddy and Sri. P. Raja Narendra Reddy for their professional secretarial assistance. The efforts of Sri. D.B. Nageswara Rao, Vidya Graphics in bringing out the report in an appealing form in a short span of time, are acknowledged.

We hope the analysis and findings of the Report would be useful for improving human development of Telangana State in future.

**S.Galab**

Director. CESS

Date: 21-04-2017

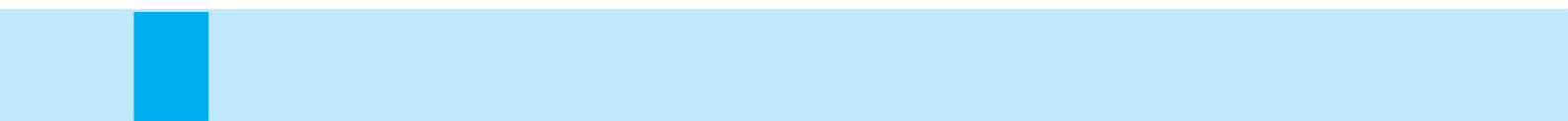
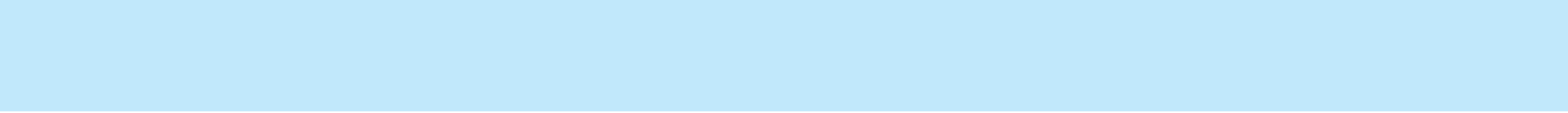
Hyderabad.

S.No		Page
	<i>Messages</i>	<i>iii-iv</i>
	<i>Preface</i>	<i>vii-viii</i>
	<i>Figures and Boxes</i>	<i>xi</i>
	<i>Executive Summary</i>	<i>xiii-xvi</i>
<b>Chapter I - Introduction</b>		<b>1-2</b>
1.0	Context	1
1.1	Policy Questions	1
1.2	Approach and Contribution of the Report	1
1.3	Structure of the Report	2
<b>Chapter 2- Human Development in Telangana State</b>		<b>3-18</b>
2.0	Introduction	3
2.1	Patterns of Human Development in Telangana in Combined Andhra Pradesh	3
2.1.1	Spatial Patterns	3
2.1.2	Vulnerable Groups and Human Development	7
2.2	Impact of <b>Business As Usual</b> approach on Human Development	10
2.3	Policy Changes for Human Development	11
2.3.1	Social Groups	11
2.3.1.1	Caste Groups	11
2.3.2	Gender Groups	15
2.3.3	Occupational Groups	16
<b>Chapter 3 - Economic Growth and Human Development</b>		<b>18-21</b>
3.0	Introduction	18
3.1	Economic Growth and Improvements in Human Development	19
3.1.1	Economic Growth and Improvements in Health Status	20
3.1.2	Economic Growth and Improvements in Educational Status	20
3.2	Improvement in Human Development and Economic Growth	21
3.3	Emerging Concerns	21
<b>Chapter 4 - Development Expenditure : Human Development and Economic Growth</b>		<b>22-25</b>
4.0	Introduction	22
4.1	Expenditure on Social and Economic Services	23
4.1.1	Expenditure on Social Services and Human Development	23
4.1.2	Expenditure on Economic Services and Economic Growth	24
4.2	Summary and Policy Suggestions	25

<b>Chapter 5 - Educational Institutions and Educational Development</b>		<b>26-31</b>
5.0	Introduction	26
5.1	Functioning of Educational Institutions	26
5.1.1	Human Resources and Infrastructure	26
5.1.2	Literacy and Educational Outcomes	27
5.2	Relation between School Infrastructure and Educational Status	29
5.3	Response of the Combined State to Improve Quality Education	30
5.4	Response of the Private Sector in the Combined State	30
5.5	Community Response to Policies in Combined Andhra Pradesh and the Private Sector	31
<b>Chapter 6 - Health Institutions and Health Status</b>		<b>32-44</b>
6.0	Introduction	32
6.1	Health Infrastructure and Health Status	32
6.1.1	State Health Infrastructure	32
6.1.2	Household Health Facilities	33
6.1.3	Relation between Health Infrastructure and Health Status	33
6.2	Reproductive Health Services	34
6.2.1	Ante-natal Care	34
6.2.2	Institutional Deliveries	34
6.2.3	Post-natal Care	36
6.2.4	Breastfeeding Practices	36
6.2.5	Immunisation of Children	37
6.2.6	Relation between Health Infrastructure and Reproductive Health Status	38
6.3	Reproductive Health, Mortality and Nutrition	39
6.3.1	Mortality	39
6.3.2	Nutritional Status	40
<b>Chapter 7- Sustainability of Improvements in Human Development</b>		<b>43-46</b>
7.0	Introduction	43
7.1	The Status of Natural Resources and Basic Health Facilities in the Districts	44
7.1.1	The Status of Natural Resources in the Districts	44
7.1.2	Basic Health Facilities in the Districts	45
7.2	Emerging Concerns	45
7.3	Government Policies and Emerging Concerns	45
<b>Chapter 8 - Summary, Conclusions and Policy Implications</b>		<b>47-52</b>
8.0	Context	47
8.1	Human Development Patterns	47
8.2	Economic Growth and Human Development	48
8.3	Development Expenditure and Human Development	49
8.4	Educational Institutions and Educational Status	49
8.5	Health Institutions and Health Status	50
8.6	Sustainability in Human Development	51
8.7	Policies of Government of Telangana State and Emerging Challenges	51
	<i>Appendix I - Chapter-wise Data Sources and Research Methodology</i>	<i>53-66</i>
	<i>Appendix II - Chapter-wise Tables</i>	<i>67-120</i>
	<i>Appendix III - Statistical Tables</i>	<i>121-134</i>
	<i>Appendix IV - Maps of Chapter-7</i>	<i>135-170</i>
	<i>References</i>	<i>171-173</i>

FIGURES		
S.No	Figures	Page
2.1	HDI of States (2004-05) - Change in HDI between 2004-05 and 2011-12 (%)	3
2.2	MPCE (Adj) Index of States (2004-05) and Change in MPCE between 2004-05 and 2011-12 (%)	4
2.3	Health Index of States (2004-05) and Change in Health Index between 2004-05 and 2011-12 (%)	4
2.4	Education Index of States (2004-05) and Change in Education Index between 2004-05 and 2011-12 (%)	4
2.5	Decomposition of Change in HDI (%)	5
2.6	HDI of Districts (2004-05) and Change in HDI between 2004-05 and 2011-12 (%)	5
2.7	MPCE of Districts (2004-05) and Change in MPCE between 2004-05 and 2011-12 (%)	6
2.8	Health Index (2004-05) and Change in Health Index between 2004-05 and 2011-12 (%)	6
2.9	Education Index (2004-05) and Change in Education Index between 2004-05 and 2011-12 (%)	6
2.10	Decomposition of Changes in HDI across Districts of Telangana (%)	7
2.11	Work and Marital Status of Rural and Urban Youth 'Never Attended School'	15
2.12	Work and Marital Status of Rural and Urban Youth 'Currently Not Attending School'	16
6.1	Health Infrastructure per 1000 Population (2014-15) Telangana and India	32
6.2	Women Received ANC in I Trimester and Full ANC -2015-16 (%)	34
6.3	Trends in Delivery Care in Telangana (Women who had Live / Still Birth during 3 reference years) (%)	35
6.4	Institutional Deliveries in Telangana-2015-16 (%)	36
6.5	Institutional and Home Deliveries in Telangana - 2015-16 (%)	36
6.6	Caesarean Sections in Telangana-2015-16 (%)	36
6.7	Women Received Post-natal Care within 2 days of Delivery-2015-16 (%)	38
6.8	Children Breastfed within one hour of Birth (%)	38
6.9	Immunization Coverage (Children aged 12-23 Months who received recommended Vaccines) (%)	38
6.10	Percentage of Children (12-23 Months) Fully Immunised-2015-16	40
6.11	Percentage of Children (under Five Years) Stunted and Underweight-2015-16	41
6.12	Population Projections by broad Age Groups-2011-2026 (in Lakhs)	41

BOXES		
S.No		Page
2.1	Handloom Weavers in Telangana	17
6.1	A Comparison of RMNCH+A (Reproductive, Maternal, Newborn, Child and Adolescent Health) across the four Southern States	35
6.2	Rising Rates of Caesarean Section: A Cause for Concern	37
6.3	ICDS Concurrent Monitoring in Telangana State	42
CHART		
3.1	Pathways of Inter-linkage between Economic Growth and Human Development	18



# Executive Summary

## Context

This report is an attempt to benchmark the pattern of human development in terms of levels, improvements and inequalities across the districts, rural-urban areas, caste groups, gender groups and occupational groups in Telangana before the formation of Telangana State. This facilitates the monitoring of the patterns of human development in Telangana State. In this backdrop, the objective of this report is to address three major issues: What was the status of human development in Telangana in the combined State of Andhra Pradesh? What should be done to improve the status of human development in Telangana State? And, will the public policies of the Government of Telangana have the potential to improve the level of human development?

The Human Development Index (HDI) is a simple measure to assess the overall status of human development in terms of three dimensions such as long and healthy life, knowledge and decent standard of living. According to the UNDP methodology, life expectancy for a long and healthy life, literacy rate and school enrolment rate for knowledge and per capita Gross District Domestic Product (GDDP) for a decent standard of living are the indicators considered for these three dimensions. Following the UNDP methodology, HDI has been computed for the 10 districts of Telangana for the years 2004-05 and 2011-12. Monthly Per Capita Consumer Expenditure (MPCE) for measuring the standard of living, adult (15 + years) literacy (with one-third weight) and average years of schooling (6-14 years) (with two-thirds weight) for knowledge and infant survival rate for long and healthy life are used to estimate HDI at district level. Equal weight is given to all the three dimensions for arriving at HDI.

## Human Development Scenario of Telangana

There has been a significant improvement in HDI across all the Indian States. The rank of Telangana improved from 13 in 2004-05 to 10 in 2011-12. The level of improvement in HDI at the state level is also reflected at the district level. There has been an improvement in HDI across all the districts of Telangana during the period under consideration. Inequalities in human development had declined during the period under consideration due to the public policies pursued in the combined state. The same is true in the case of the components of human development-income levels or standard of living, health and education. Gender inequalities have also declined across the districts. Gaps in human development across the caste groups - Scheduled Castes (SCs), Scheduled Tribes (STs), Backward Castes (BCs) and Other Castes (OCs) - have declined in Telangana. Similarly, inequalities across the occupational groups have also declined in the rural as well as the urban areas. The HDI of urban Muslims, who constitute 75 percent of the total Muslim population, is lower than the state average of urban Telangana during all the time points, though total HDI (urban + rural) as well as rural HDI of Muslims are higher than the respective state averages. All the above have contributed to the reduction in inequalities in human development across districts.

## Business as Usual Approach does not Suit Telangana State

Inequalities persist across districts, rural-urban areas, caste groups, gender groups and occupational groups. Moreover, the rate of decline of inequalities in human development across caste groups during the period 2007-08 and 2012-13 was considerably

higher than during 2002-04 and 2007-08. Sustaining of this rate of reduction is very essential. Hence it is a big challenge. The share of the standard of living in the total change of HDI between 2004-05 and 2011-12 is higher (ranging between 10.6 to 57.5 percent) for most of the districts whereas the contribution of health and education has been lower (ranging between 6.3 to 27.3 percent and 3.5 to 19.7 percent respectively). Hence the share of education and health in the change in human development needs to be expanded.

Will the **Business as Usual** approach in terms of the continuation of the public policies of the combined state by the Government of Telangana accelerate the process of enhancing the levels of human development and reduction in the spatial, social and occupational inequalities in human development? The impact of the continuation of policies of the combined state in the future has been assessed through the estimated HDI for 2015 across the districts, on the basis of the rates of improvement in the components of HDI between 2004-05 and 2011-12. But, the results have indicated that the **Business as Usual** approach would not bring any significant shifts in the patterns of human development and therefore will not enable Telangana State to address the concerns of human development. The analysis conducted in the report also provides evidence to this. Hence, significant changes are required in public policies and related programmes to hasten the process of improving human development and reducing its inequalities.

### Higher and Inclusive Growth should be the Key for Human Development

In the higher economic growth context of Telangana, the relationship between economic growth and improvements in education and health components of human development has weakened (See Chapter 3 Appendix). That is, in spite of economic growth, corresponding improvements have not taken place in the educational status and health status of households across the districts. It is evident that higher growth is a necessary but not a sufficient condition to bring about improvements in human development. The support of state interventions, outside the growth process, to enhance household incomes might have come to the rescue of the districts with lower economic growth. But inclusive economic growth (sharing widely the income benefits of growth) has contributed more to improvements in human development.

The relationship of economic growth with the growth in educational and health status can be strengthened by allocating more funds to convert improvements in education and health status to enhance labour productivity. Moreover, this also demands the allocation of more funds to improvements in education and health status from the revenues generated through higher economic growth. This ultimately expands the contribution of education and health to the change in human development.

### Decentralized Method of Financing Human Development should be the Strategy

The available evidence shows that the allocation of funds has not been made on the basis of the level of demand for the allocation of funds under social services. Similarly, the funds under economic services were inadequate to increase economic growth. The allocation of funds to the districts for financing human development should be based on a **need specific decentralized method** in contrast to methods followed earlier. This becomes even more important in view of the recent decentralization initiatives in terms of the reorganization of 10 districts into 31 districts in Telangana State.

### Educational Institutions Need Structural Reforms

Parents have responded positively to the policies of the government to enrol children in government schools. But the quality of learning outcomes of children in government schools is poor compared to private schools. The rising aspiration of parents, especially mothers to improve the educational trajectory of their children is clearly visible. This is reflected in the fact that even illiterate mothers are sending their children to private schools thus investing in their children's education. Private schools have not penetrated into the districts where the quality of learning outcomes of the children is poor or the districts where there are deficits in the school infrastructure of the government. More boys than girls, relatively lower proportion of children from SCs and STs and also from the poor are enrolled into private schools with the hope that the private schools would provide quality education. Moreover, income inequalities across the social groups have led to widening the existing social divide across gender, caste and class in schooling.



On the other hand, the quality of learning outcomes in terms of numeracy and literacy skills appropriate to the grades have declined over time in government as well as private schools (low fee schools). Inadequate and inefficient utilization of school infrastructure has constrained the learning outcomes of children. But the government decisions in the combined state in expanding the school infrastructure was not in line with the requirements in the districts. The dropout rate of children from schools is a big challenge that needs to be addressed on a war footing. These concerns demand a big push of reforms from the Government of Telangana. Continuing the **Business as Usual** model of addressing the concerns of school education will not yield the desired results in the immediate run.

### Health Institutions should gear up to meet the Challenges

The inadequacy of public health infrastructure has constrained the health status in some of the districts of Telangana. Further, the inefficient utilisation of the public infrastructure has depressed the health status in some other districts. Similarly, the reproductive health status is constrained due to inadequate and inefficient utilisation of public infrastructure. There are inadequacies in reproductive health services. The NFHS Survey 2015-16 reported that IMR in the state is 28. A further reduction of IMR requires better medical care at the neo-natal stage which should be extended during pregnancy and delivery. There are also wide inter-district variations in MMR ranging from 71 in Hyderabad to 152 in Adilabad.

A higher percentage of children are stunted (falling short of height to age) in Khammam and Adilabad districts which have a high concentration of tribal population, and also in the bottom level HDI districts of Nizamabad, Mahbubnagar and Medak. A better reproductive health status enhances the nutritional status of children. The population of women in the reproductive age (15-49 years) is expected to increase from 98 lakh in 2011 to 126 lakh in 2026, growing at the rate of 1.7 percent per annum. This future situation would create a severe pressure on additional maternal, new-born and child health services in the coming years. The scaling up of the RMNCH+ A (Reproductive, Maternal, Newborn Child and Adolescent Health) will enable the state to address these concerns and to streamline the functioning of the public health institutions in Telangana State. However, more funds need to be allocated to the health sector in the state.

### Sustainability of Improvements in Human Development should be the Bottom Line

A high incidence of natural resource deprivation is pronounced across the districts of Telangana due to overdrawing of ground water, lower forest base and higher moisture stress. The situation is equally bad in regard to the household health facilities like the availability of safe drinking water and toilet facility in the household premises. Further there are huge variations across the districts in these resources in Telangana. The reduction in the levels of natural resource deprivation and improving access to the two basic health amenities at the household level will not only address the inequalities in human development across the districts but also bring about a further improvement and sustainability in human development.

### Policies of the Government of Telangana and Emerging Challenges

The policy framework of the Government of Telangana should be related to the concerns emerging from the above analysis to have a greater impact for improving human development and reducing inequalities, strengthening the inter-linkages between economic growth and human development; providing adequate public funds for social and economic services; and strengthening the functioning of public institutions relating to education and health.

### Decentralisation - An Oppurtune Move

The state may be planning to function on a decentralised-participatory model of development. The decentralisation measure of reorganising the 10 districts into 31 districts reflects this and offers a greater potential for reducing inter-district inequalities in economic growth and human development. Further, all the institutions including education and health at the district level and below become accountable and transparent for the people as the administrative area becomes smaller and direct interaction between people and government also becomes feasible. Given the active civil society, the participation of people in monitoring local governance and other institutions becomes possible. It also has a tremendous potential for addressing concerns specific to the districts. Integrating village plans and aggregating them at the mandal and in turn at the district level becomes easy. It becomes possible to fix the targets for human development, economic growth and linkages between the two.



Hence this initiative can address the concerns about strengthening the functioning of the institutions, especially relating to health and education, and the preparation of practical district plans to fix the targets of economic growth and human development and their interrelation.

### Minimizing Economic and Social Inequalities

The recent budget of Telangana State has made budget allocations to the Backward Castes, the Most Backward Castes, Scheduled Castes, and Scheduled Tribes and Minorities. This would be a strong contribution to inclusive growth. This new social framework model for the development of Telangana has the potential for inclusive economic growth and social development (human development). This also enables the state to link human development to economic growth through utilising the existing stock of skills of the Backward and the Most Backward Castes. This policy initiative addresses the concern which has been spelt out in the analysis that economic growth should be inclusive and that human development should also contribute to economic growth through the efficient utilisation of the existing skills and subsequently upgrading the skills of the people. It also addresses the concern that inequalities in human development among social and occupational groups should be reduced.

There are variations across the districts in regard to economic growth and hence variations in human development. Mission Kakatiya, for renovating tanks and revitalising traditional irrigation structures, will bring vibrancy in agriculture and allied sectors of the rural economy. This also benefits the small farm holders since a large proportion of these farmers have lands under tanks. Further, the fixed cost and running costs of irrigation systems like borewells will come down and the cost of cultivation will decline to that extent. The initiatives in terms of the industrial sector policies to augment the industrial base of the state and the expansion of Information Technology have the potential to boost the growth in the industrial and service sectors of the economy. Thus the vibrancy in these three sectors has the potential for increasing economic growth in the state.

The expansion of the industrial sector, especially agro-based industries, enables the labour force to shift from agriculture to non-agricultural activities. As a result, productivity goes up in both the sectors

and the income disparities between the two sectors will decline. The government has also initiated measures to include households belonging to SCs, STs and women to be a part of the expansion of the industrial base as entrepreneurs to make industrial growth inclusive. These initiatives in agriculture and non-agriculture sectors will also make economic growth inclusive.

### Sustainability of Improvements in Human Development

There are emerging concerns that some of the mandals in the newly formed districts are deprived of the natural resource base (moisture status, ground water and forest cover) and basic household health facilities like drinking water and sanitation in house premises. Harithaharam and Mission Bhagiratha have the potential to address these concerns. Harithaharam has expanded the tree cover throughout Telangana which would contribute to a reduction in temperatures resulting in less evaporation of water in rural and urban areas. Mission Bhagiratha has the mandate of providing adequate and safe drinking water to all the households in their premises across the villages and urban areas. The water for this mission is drawn from the two perennial rivers Godavari and Krishna. This would reduce the withdrawal of ground water for drinking purposes. Mission Kakatiya would also add to the ground water resources. These three initiatives together with the planned major and medium irrigation projects and watershed programmes have the potential for protecting the natural resource base and provide drinking water, the basic health facility.

The state has initiated measures to address the concerns in education and health sectors. This has the potential for improving the functioning of the education and health institutions in the state. Thus, the policy initiatives may lead to decentralized-new social framework-sustainable development model of the Government of Telangana. This is radically different from the development model pursued in the combined state. This innovative development model also has the potential to improve the negotiating capacity of Telangana state with the national government and international institutions for financing human development, economic growth and their linkages. However, the state has to establish an official unit for monitoring human development.

### 1.0 Context

Telangana became the 29th state of the Indian Union after the bifurcation of combined Andhra Pradesh. The desire for inclusive development through decentralized governance and for deepening and widening of the democratic functioning of the state, market and civil society to protect the rights of every citizen is the policy priority for the new state. The policy goals of the Government of Telangana broadly converge with the development paradigm of UNDP that human development is the expansion of people's freedom to live long, healthy and creative lives; to advance the other goals they have reason to value; and to engage actively in shaping development equitably and sustainably.

The social structure in Telangana is highly skewed towards socially marginalized sections - Backward Castes (BC), Scheduled Castes (SC) and Scheduled Tribes (ST) and religious minority groups - which constitute 85 percent of the state population. Hence, a new social framework that allows inclusive and participatory development should be able to meet the aspirations of the people (Rao, 2014).

All the above need a concise but comprehensive policy oriented analysis with a strong empirical base to formulate new policies replacing the old policies of the combined state of Andhra Pradesh with regard to the human development situation, socio-economic inequalities and the inter-linkages with economic growth in Telangana Society. These constitute the concept and content of this report. This analysis also helps to benchmark the human development dynamics in Telangana State.

### 1.1 Policy Questions

This report addresses the following issues:

What is the status of inter-district and inter-community inequalities in the state in regard to human development?

What is the role of economic growth in determining human development in Telangana?

What is the role of public financing in improving human development and reducing inequalities?

How are the institutions of school education and health determining the status of human development?

Whether improvements in human development are sustainable?

Are the policies of Telangana state in line with the concerns emerged from the analysis?

### 1.2 Approach and Contribution of the Report

The approach adopted has four strands. The first strand is developing a narrative on the status and inequalities in human development from below the state level (disaggregate) to develop it for the state (aggregate) for capturing the varied contexts in the state. This is for providing inputs for the decentralized paradigm to be pursued to ensure that human development will reach everyone.

The second strand is centering the whole discourse through locating the correlates of human development in the domain of economic growth, financing human development and functioning of institutions for human development. This is for providing policy inputs in three domains. Locating human development in the domain of economic growth enables us to provide policy inputs to achieve the desirable levels and patterns of economic growth. The nature of economic growth has been analyzed in terms of diversification of growth from agriculture

to non-agricultural sectors, percolation of the benefits of economic growth to household income and households in turn investing the income in human development (this reflects the economic growth-human development linkages); and human development in turn leading to improvements in labour productivity (this reflects the linkages between human development and economic growth). This means that the nature of economic growth has been assessed in terms of the mutually reinforcing linkages between economic growth-human development-economic growth. Linking human development to the allocation and utilization of funds relating to social and economic services enable us to identify the (in)adequacy in the allocation of funds and the (in)efficient utilization of funds allocated across the districts. This analysis provides inputs for public expenditure policies with regard to human development. Associating human development with the institutions for human development facilitates the analysis to assess the (in)efficiency of the institutions of education and health. The analysis of public expenditure also throws light on this issue.

The third strand relates to the issue of the weakening relationship of human development with economic growth even in high economic growth contexts. High growth had been achieved in the Telangana economy even in the combined state of Andhra Pradesh from 2004-05 onwards. Hence we have considered the period between 2004-05 and 2011-12 to examine the relationship between economic growth and human development in the context of high economic growth. This timeframe also facilitates the identification of the impact of the public policies pursued in the combined state on human development in Telangana. Moreover, the estimation of the status of human development by 2014-15 in Telangana through 2004-05 and 2011-12 enables us to assess further the impact of the continuation of public policies of the combined state by 2015 on human development in Telangana, just a few months after the formation of Telangana State.

The fourth strand relates to the issue of sustainability of growth in human development. This explores the implications of natural resource deprivations relating to agriculture for growth in human development.

This report is unique in many ways. This is the first human development report for the newly formed state of Telangana which serves as a baseline

for taking stock of issues, challenges and opportunities for improving human development<sup>1</sup>. Secondly, the report estimates HDI for the vulnerable groups classified as structural and occupational, besides the conventional HDI for the state and districts. Comparable human development indices have been estimated for the social groups of Scheduled Castes (SCs), Scheduled Tribes (STs), and women who suffer from structural vulnerabilities; Muslim minorities; and occupational groups which suffer from occupational vulnerabilities. Thirdly, and very importantly, questions relating to the financing of human development have been brought into the report. Given the limited scope of published data on annual budgets, the report has estimated the extent of public expenditure needed for human development at the district level which would help the state to design appropriate policy measures. Fourthly, the report effectively addresses the larger issue of the weakening link between economic growth and human development across the districts in the state. And finally, the status of natural resources is analysed to explore the implication of natural resource deprivation in regard to the inequities, improvements and sustainability in human development across the newly formed districts.

### 1.3 Structure of the Report

The report is organized into eight chapters. The first chapter deals with the context, objectives and approach and contribution of the report. The second chapter presents estimates and analysis of HDI across the districts and for structurally and occupationally vulnerable groups in Telangana. The link between economic growth and human development is examined in the third chapter while the fourth chapter analyses public financing and its impact on human development and economic growth across districts. The fifth and sixth chapters unpack the human development index respectively into education and health to examine in detail the functioning of the institutions related to these two dimensions of human development. The seventh chapter deals with the identification of the mandals that need immediate attention in regard to natural resource conservation to revitalize agriculture and also to identify the deficits in household facilities in these mandals, like drinking water and sanitation, to support health services. The eighth, the last chapter, presents the interface of concerns emerged from the analysis with the policies of the government of Telangana.

<sup>1</sup> For details on the data sources see Chapter 1 Appendix

## Human Development in Telangana State

### 2.0 Introduction

The basic objective of this chapter is to identify the policy concerns for improving the level of human development and at the same time reducing inequalities in human development in Telangana State.

More specifically, this chapter addresses itself to three policy questions: What are the policy concerns that arise from the analysis of human development patterns which have resulted due to the policies of the combined state? What policy concerns emerge from the human development outcome patterns in the **Business As Usual** approach? What are the policy measures to be undertaken by the Government of Telangana to reduce the inequalities across spaces (districts, rural and urban), social groups (caste and gender) and occupational groups?

### 2.1 Patterns of Human Development in Telangana in Combined Andhra Pradesh

The Human Development Index (HDI) is a simple measure to assess the overall status of human development in terms of three dimensions such as long and healthy life, knowledge and decent standard of living. According to the UNDP methodology, life expectancy for long and healthy life, literacy rate and school enrolment rate for knowledge and per capita Gross District Domestic Product (GDDP) for decent standard of living are the indicators considered for these three dimensions. Following the UNDP methodology, HDI has been computed for the 10 districts of

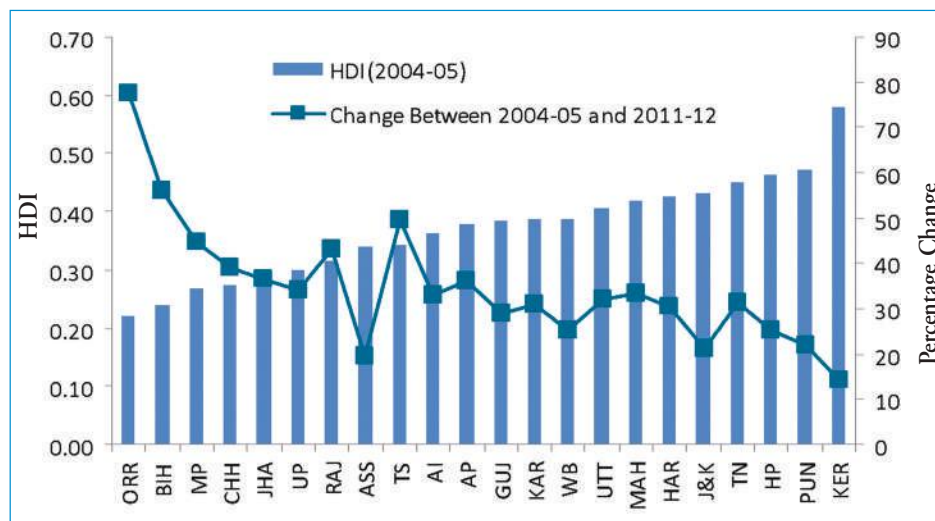
Telangana for the years 2004-05 and 2011-12. Monthly Per Capita Consumer Expenditure (MPCE) for measuring the standard of living, adult (15 + years) literacy (with one-third weight) and average years of schooling (6-14 years) with two-thirds weight for knowledge and infant survival rate for long and healthy life are used to estimate HDI at district level. Equal weight is given to all the three dimensions for arriving at HDI.

#### 2.1.1 Spatial Patterns

The patterns of human development of Telangana have been considered to assess the contribution of the policies pursued in the combined state of Andhra Pradesh. For this, the years 2004-05 and 2011-12 have been selected.

There has been a significant improvement in HDI across all the states. However, the relative rankings of the states changed in the seven years between 2004-05 and 2011-12. In both the years, Kerala, Tamil Nadu, Himachal Pradesh and Punjab were

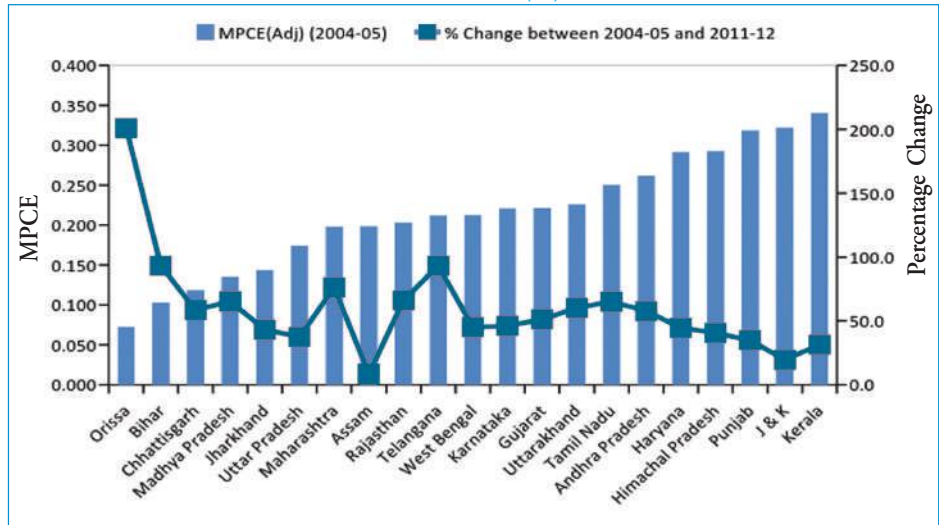
Fig. 2.1: HDI of States (2004-05) - Change in HDI between 2004-05 and 2011-12 (%)



Source: Based on the data given in Table A2.1

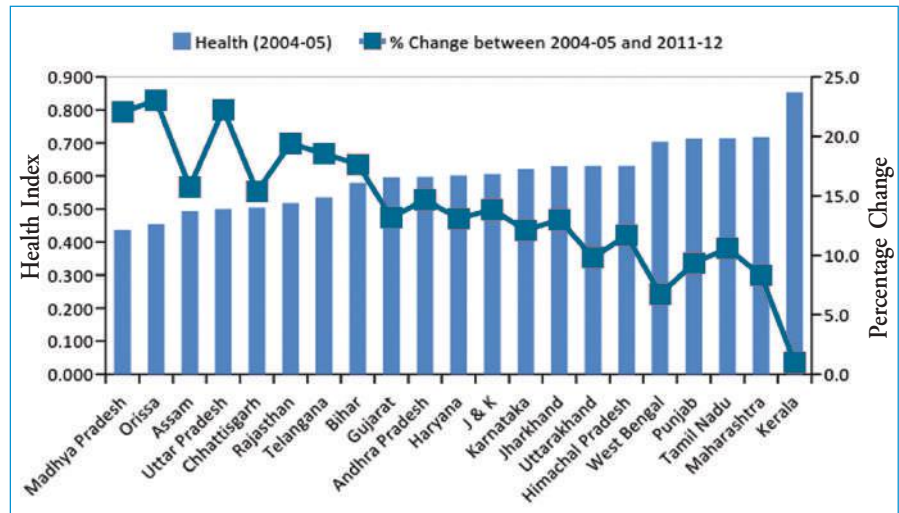


Fig. 2.2: MPCE (Adj) Index of States (2004-05) and Change in MPCE between 2004-05 and 2011-12 (%)



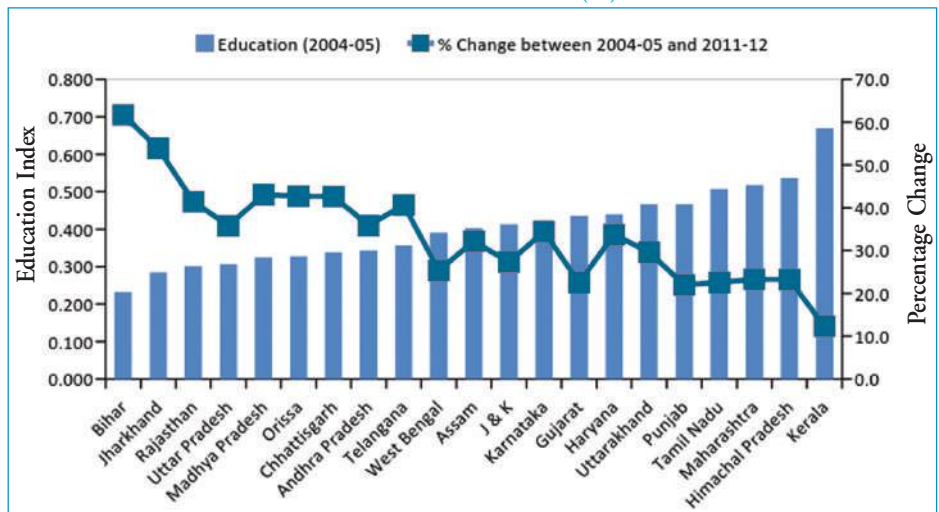
Source: Based on the data given in Table A2.1a

Fig. 2.3: Health Index of States (2004-05) and Change in Health Index between 2004-05 and 2011-12 (%)



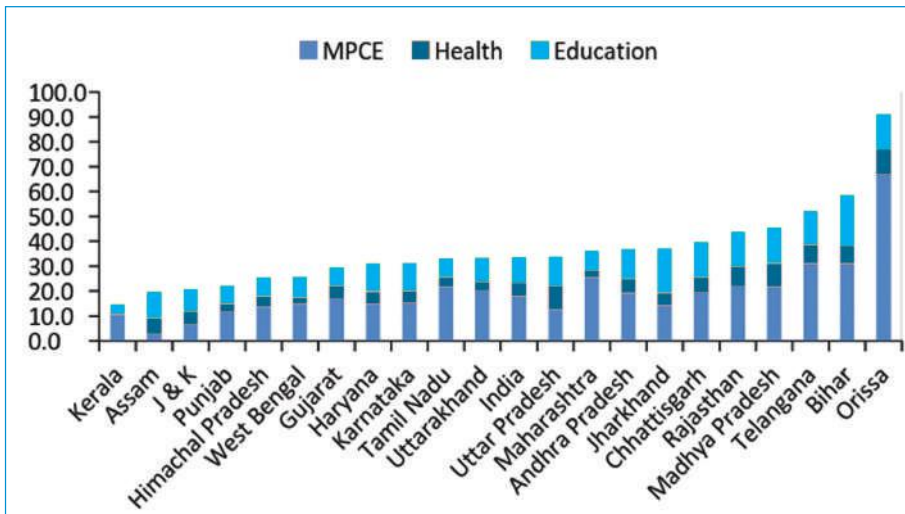
Source: Based on the data given in Table A2.1a

Fig.2.4: Education Index of States (2004-05) and Change in Education Index between 2004-05 and 2011-12 (%)



Source: Based on the data given in Table A2.1a

Fig.2.5: Decomposition of Change in HDI (%)



Source: Based on the data given in Table A2.1a

ranked in the top four positions, while Bihar, Madhya Pradesh, Chhattisgarh and Odisha were the bottom four. But, the rank of Telangana improved from 13 in 2004-05 to 10 in 2011-12 (Table A2.1). The components of HDI across the states are given in table A2.1a and fig. 2.1 to 2.5.

The improvements of HDI in Telangana are also reflected at the district level. There has been an improvement in HDI across all the districts of Telangana during the period under consideration.

Hyderabad and Ranga Reddy have retained their top two positions in the spectrum of human development of Telangana, in both the years (2004-05 and 2011-12). Nizamabad, Medak and Mahbubnagar have remained in the bottom.

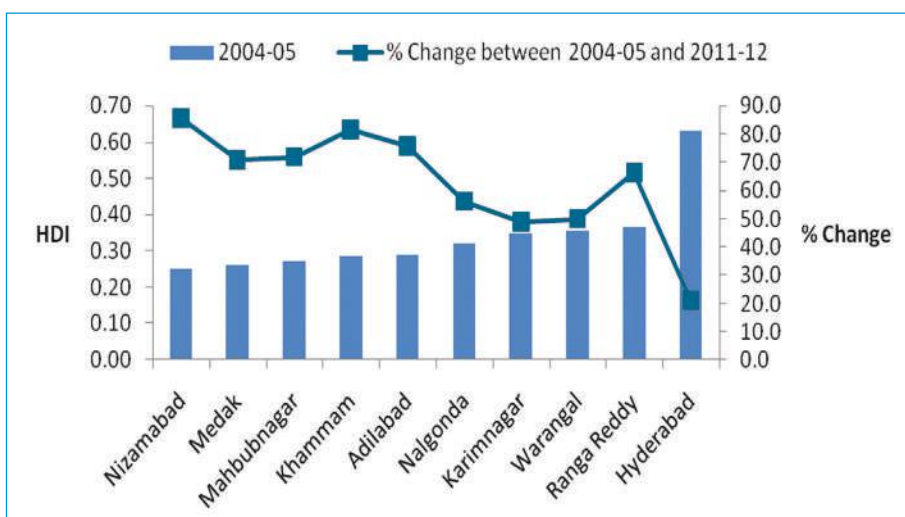
Warangal, Karimnagar, Khammam, Adilabad and Nalgonda have stayed in the middle (Table A2.2). The districts are categorised as top, middle and bottom level HDI based on ranks of HDI in 2011-12 (Table A2.3). The projections for 2015-16 give a picture of human development in the districts (Table A2.4) if the Business As Usual approach is followed and their relative rankings are shown in table A2.5.

The districts with a low human development in 2004-05 have improved faster by 2011-12 in comparison to the districts with higher human development (Fig. 2.6 to 2.9). Further, the districts with a low standard of living in 2004-05 have improved their standard of living faster compared

*HDI rank of Telangana improved from 13 in 2004-05 to 10 in 2011-12*

*Inequalities in human development and its components (standard of living, health and education) had declined*

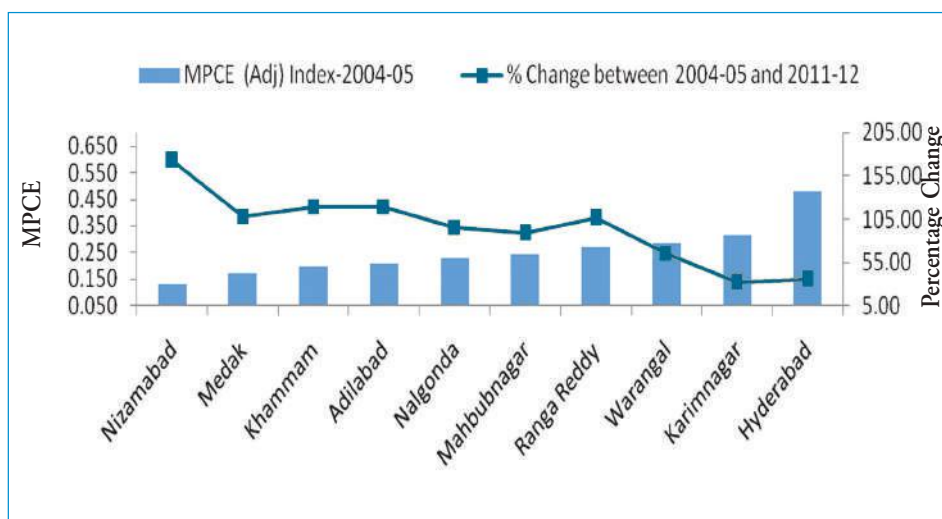
Fig. 2.6: HDI of Districts (2004-05) and Change in HDI between 2004-05 and 2011-12 (%)



Source: Based on the data given in Table A2.2

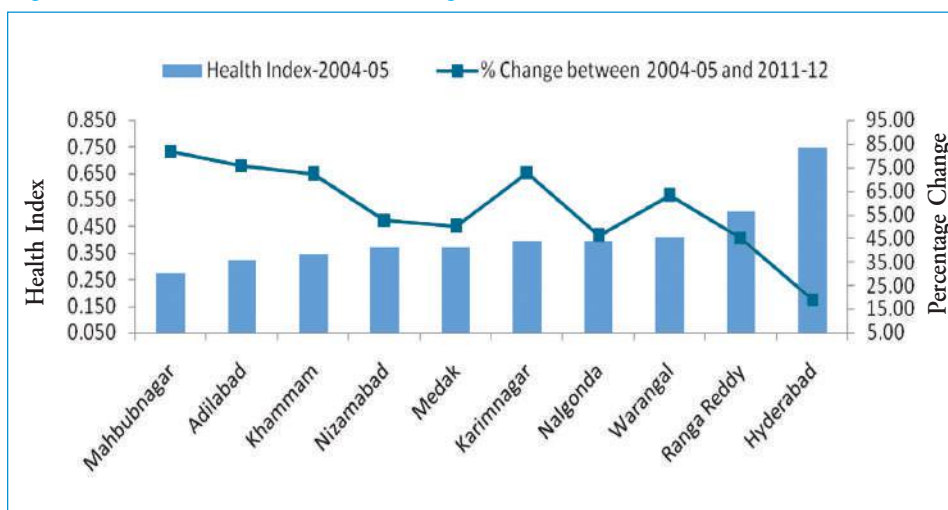
*Standard of living component has emerged as the dominant factor in the improvements in HDI*

Fig. 2.7: MPCE of Districts (2004-05) and Change in MPCE between 2004-05 and 2011-12 (%)



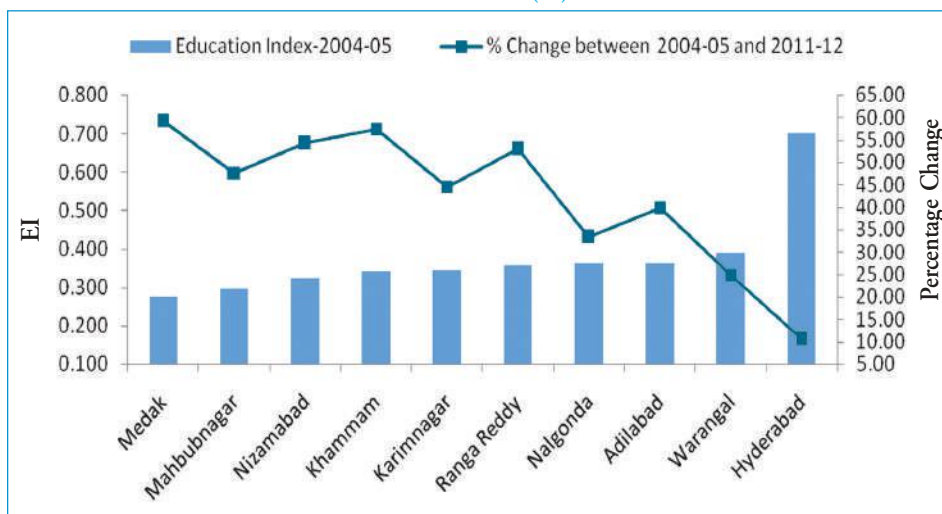
Source: Based on the data given in Table A2.3

Fig. 2. 8: Health Index (2004-05) and Change in Health Index between 2004-05 and 2011-12 (%)



Source: Based on the data given in Table A2.3

Fig.2.9: Education Index (2004-05) and Change in Education Index between 2004-05 and 2011-12 (%)



Source: Based on the data given in Table A2.3

to the districts with a higher standard of living. Similar is the case with the status of health and education. Thus, it is evident that the inequalities in human development and its components -income levels or standard of living, health and education - had declined during the period under consideration in Telangana due to the public policies pursued in the combined state.

The decomposition of the changes in HDI between 2004-05 and 2011-12 across the districts reveals that the share of standard of living in the total change is higher for most of the districts whereas health and education occupied second and third place respectively. The exceptions were: Ranga Reddy in the case of health, Karimnagar in the standard of living and Nizamabad where the proportions of health and education are equal (Fig. 2.10).

The above outcomes have been divided into two categories as follows:

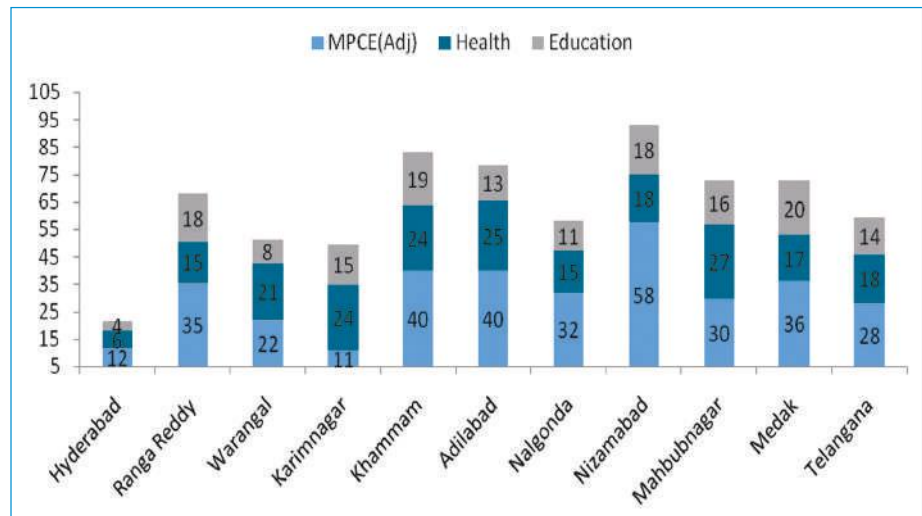
### Upbeat Outcomes

- ❖ Telangana was ranked 10<sup>th</sup> in the Human Development Index (HDI) in 2011-12, among twenty-one major states of India, through a significant improvement over its previous rank of 13 in 2004-05.
- ❖ HDI of Telangana was higher than the national average in 2011-12.
- ❖ The overall improvement in human development at the state level was also reflected in all the districts.
- ❖ The districts with a lower HDI in 2004-05 had improved their HDI status faster compared to the other districts by 2011-12. This reflects the declining inequalities in HDI across the districts. The same is evident in the case of the three components of HDI, viz., standard of living, health and education. Thus convergence in HDI has taken place across the districts of Telangana.

### Alert Upholds

- ❖ None of the middle order districts have joined the ranks of the top districts.

Fig.2.10: Decomposition of Changes in HDI across Districts of Telangana (%)



Source: Based on the data given in Table A2.3

- ❖ Nizamabad, Medak and Mahbubnagar continued to remain at the bottom.
- ❖ The contribution of the non-economic components (health and education) was lower than that of economic component.

### 2.1.2 Vulnerable Groups and Human Development

This section discusses the situation of the vulnerable groups when compared with the rest of the society. The discussion revolves around the components of human development, the position of vulnerable groups in each of the components -standard of living, education and health- vis-a-vis the rest of the groups in the mainstream. To be more specific, this section focuses on vulnerable groups such as caste groups (SC, ST, BC and OC), gender groups, Muslim minority and occupational groups.

#### Scheduled Castes and Scheduled Tribes

The Human Development Report (2014) identifies **structurally vulnerable groups** of people who are more vulnerable than the rest of society because of prejudicial / unequal treatment by the latter. SCs and STs have historically been disadvantaged and vulnerable as they have been subject to social exclusion and discrimination and are therefore left behind in the development process.

The HDI is a summary index that reveals the status of human development of SCs and STs and also gives the relative position of their status compared to the other social groups in the social structure.



*HDI inequalities across caste groups have declined but persist*

*Caste inequalities in HDI were higher in rural areas than in the urban*

*Gender differentials (male/female ratio) in HDI had also come down for all districts except Adilabad*

The changes that have taken place over time in human development for SCs and STs and the drivers (barriers) that have contributed (constrained) provide an opportunity to analyze such changes, benchmark their status and plan for a roadmap to reduce the gap between the socially vulnerable groups and mainstream society in Telangana State.

HDI is constructed on the basis of data from the 2<sup>nd</sup> round (2002-04), 3<sup>rd</sup> round (2007-08) and 4<sup>th</sup> round (2012-13) of District Level Household Surveys (DLHSs), broadly adopting the UNDP approach. However, the indicators considered for the construction of indices, component-wise, vary from those employed in the standard measurement of HDI.

The estimates of HDI are consistent with the normal expected pattern of HDI. The HDI value was the lowest for the STs (0.257) and low for SCs (0.348) followed by BCs (0.387) and OCs (0.510) in 2007-08 (Table A2.6). In other words, there was no change in their relative position in the social structure. The relative HDI status of SCs and STs had been the same even in 2002-04. The HDI of the OCs was 2.19 times that of STs in 2002-04 while it was 1.98 times in 2007-08. This indicates that inequalities in HDI had begun to come down over time. This is due to the faster growth in the HDI of socially vulnerable groups vis-a-vis the other social groups. Interestingly, all the social groups have higher HDI in urban areas than in rural areas in both the periods. This indicates that urbanization, as a development process, can improve the HDI of the SCs and STs, but it is not the only solution to depend on. Providing urban facilities and opportunities in the rural areas would also enable the socially vulnerable groups to improve their HDI level. The inequalities in HDI were higher in the rural areas than in the urban. But the rate of decline in inequalities was faster in rural than in urban during the period under consideration.

What factors were responsible for the variations in the HDI between the socially vulnerable and other social groups? The decomposition of HDI in terms of the Standard of Living Index (SLI), Health Index (HI) and Education Index (EI) enables us to address this question. The lower levels of standard of living and also educational status have depressed the HDI

of the SCs and STs compared to other social groups. Of the two, the lower status in education has contributed to their lower levels of HDI and ultimately led to higher inequalities in HDI. The higher decline in inequality in the standard of living, rather than the marginal decline in the inequality of educational status, has been the main factor which has contributed to the decline in inequalities in HDI between the socially vulnerable and other social groups. This was true for both rural and urban Telangana. It is very striking to note that the rate of decline has been faster in rural areas over time as compared to urban areas. However, the inequalities in the standard of living as well as education continue to be higher in rural areas.

## Gender and Human Development

This section analyses the gender gap in HDI and its components across districts of Telangana. There are differences based on social-structure between men and women in human development achievements which are captured by gender specific indices. The gender gap measured through the inequalities in achievements can be captured through Human Development Indices estimated for men and women differently. A comparison of HDI for men and HDI for women shows the gender gap (ratio of male to female HDI) in HDI. Gender differentials in human development indicate social structure inequalities between men and women which may increase the vulnerability of women in times of shock and in conditions of risk. Therefore, it becomes important to assess the gender gap.

The absolute value of HDI for men and women had increased for the state and also across the districts in 2011-12 over 2004-05. Gender differentials (male/female ratio) in HDI had also come down for all districts except Adilabad (Table A2.7).

The rate of change in gender differentials in HDI was higher for districts with a low female HDI like Mahbubnagar, Nalgonda, Nizamabad and Karimnagar. The percentage rise in female HDI in Mahbubnagar, Karimnagar and Nizamabad districts was more than the state average in 2011-12 resulting in a narrowing of the gender gap in HDI. Medak district presents a different model, starting with a low base for HDI for women but gender differentials had not fallen much by 2011-12. Hyderabad, an urban district, started with a

high base and also achieved a high value of HDI for women in 2011-12 so that the gender differential narrowed (Table A2.7). Khammam and Adilabad districts had a high gender gap in HDI in 2011-12. This might have been due to the higher percentage of tribal communities in these districts.

It can be seen that the gender gap has narrowed for all the components of HDI - income, education and health across all the districts (except Adilabad) in 2011-12. However, among all the three components, education differentials were the highest followed by income differentials across the districts in 2011-12 (Table A2.7a).

### Minorities-Muslims

Muslims constitute 12.8 percent of the total population of Telangana (Census 2011), the predominant minority community in the state. They are concentrated in Hyderabad, Ranga Reddy, Nizamabad, Medak and Mahbubnagar districts. Nearly 75 percent of the Muslim population live in urban Telangana.

Of the total urban Muslim population about two-thirds live in the top HDI districts- Hyderabad and Ranga Reddy - and the remaining one - third are spread across the middle (nearly 19 percent) and bottom (15 percent) level districts.

The HDI is constructed for Muslims on the basis of data from 2nd (2002-04), 3rd (2007-08) and 4th (2012-13) rounds of District Level Household Surveys (DLHSs) with the same approach used for social groups.

The HDI of Muslims has increased from 0.391 in 2002-04 to 0.461 in 2007-08 and further to 0.600 in 2012-13 growing at an annual rate of 4.2 during 2002-2008 and 5.4 percent during 2007-2013 (Table A2.7b). The growth of health index has contributed more during the first period while the standard of living and education indices have contributed considerably during the latter period (Table A2.7c).

The HDI of Muslims is higher in urban Telangana as compared to rural Telangana during all the three time points, as 66 percent live in the top level HDI districts of Hyderabad and Ranga Reddy.

The urban-rural inequalities have not shown a consistent decline. The urban-rural inequalities had

increased by 2007-08 over 2002-04. The same had declined by 2012-13 over 2007-08. Still there are considerable inequalities between urban and rural areas. In order to reduce inequalities focus should be more on improving the standard of living and education in rural Telangana.

The HDI and its components for Muslims are higher than the state average during all the three time points. However, the HDI and its components of urban Muslims who constitute 75 percent of total Muslim population are lower than the state average for urban areas. On the contrary, rural Muslims who constitute 25 percent of total Muslim population have a higher HDI (and also its components) than the state average for rural areas.

### Occupational Groups and Human Development

The occupational status of the members of a household determines its income level, which in turn determines the command of the household over resources. Thus the household's capacity to lead a decent life can be enhanced through a better occupation. The nature of the occupation of a person promotes better health and education not only for those who are employed but also for those who are dependent on them. Various occupations would reflect the various effects on the living standard of a household in terms of education, health and basic amenities. Since a better occupation strengthens livelihoods and human development, an attempt is made to construct HDI for the occupational divisions given in Interviewers Manual of district level household survey, DLHS - III (2007-08) and DLHS IV (2012-13). The study has categorized the occupations into Professionals, Clerks, Self-employed trade, Casual Labour Services, Self-employed Agriculture, Casual Labour Agriculture, Skilled non-agriculture and Unskilled non-agriculture. The human development indices have been constructed broadly adopting the UNDP approach. However, the indicators considered for the construction of component-wise indices vary from those employed in the standard measurement of HDI.

### Rural Occupational Groups

Self-employed and casual labour in agriculture and allied sectors and skilled and unskilled labour in the non-agricultural sector were the important

*HDI and its components of urban Muslims who constitute 75 percent of total Muslim population are lower than the state average for urban areas.*

*Further improvements in HDI of Muslims should come more from improvements in the standard of living and education*

*HDI was higher among skilled non-agricultural workers in rural Telangana*

occupational groups in rural Telangana. Among these groups, the HDI was higher among skilled non-agricultural workers as compared to the other occupational groups. This is due to the high levels of HI and EI for this group (Table A2.8). But this is not true in the case of skilled and self-employed handloom weavers (see Box 2.1). The gap in HDI between skilled non-agricultural workers and the rest of the occupational groups ranged between 17 and 21 percent. The gap was high for EI and ranged between 16 percent for the self-employed in agriculture to 34 percent for unskilled non-agricultural labour. The gap in SLI was 26 percent for the self-employed in agriculture and 18 percent for unskilled non-agricultural labour. Casual workers both in agriculture and non-agriculture have a low level of human development.

### Urban Occupational Groups

Unskilled labour, production related skilled workers, professionals, casual labour in agriculture, self-employed in trade and casual labour in services were the important occupational groups in urban Telangana. Among these occupational groups, the level of development was low for casual labour in services in urban areas (Table A2.9). This could be attributed to the low level of their educational status.

The percentage gap in human development in various occupations is derived by taking professionals/senior executives as control groups for urban areas. The percentage gap was higher for all the indicators except for education in the case of casual labour in services than in the other occupations. It was observed that in 2007-08 there was a gap of 44 percent in HDI, 57 percent in EI and 42 percent in SLI. The gap was wide for other vulnerable occupations such as casual labour in agriculture and unskilled labour also as compared to professionals in urban areas. This indicates that migrating to urban areas is not a better option for workers as there is no additional gain in working as casual labour in urban areas. Except in education, skilled labour and the self-employed in trade were not much below the level of professionals.

### Occupational Groups, Rural-Urban Gap

The HDI for all occupational groups were lower in the rural areas as compared to urban areas. The

percentage gap in HDI between rural and urban areas was 25 to 30 percent for skilled and unskilled workers during 2007-08. This gap declined to 5 to 16% respectively during 2012-13. This declining inequality is due to a decline in the gap in SLI followed by EI.

## 2.2 Impact of 'Business As Usual' approach on Human Development

The impact of **Business As Usual** approach has been assessed through the estimated HDI for 2015, on the basis of the rates of improvement in the components of HDI between 2004-05 and 2011-12 across the districts (Tables A2.10-A2.13a). The human development outcomes would be as follows:

### Upbeat Outcomes

- ❖ According to the estimated HDI for 2015-16, the top 3 districts would be Hyderabad, Ranga Reddy and Khammam.
- ❖ Khammam, one of the middle order districts, would join the ranks of the top districts.
- ❖ Nizamabad, one of the bottom districts, would join the middle order districts

### Alert Upholds

- ❖ Medak and Mahbubnagar would continue to be in the bottom of the human development.
- ❖ Nalgonda, one of the middle order districts, would slip to the bottom districts.

Thus, the continuation of earlier policies in the Telangana State cannot bring any remarkable shifts in human development. Hence significant changes are required in public policies and related programmes. The major challenges include: uplifting human development in the districts that remained at the bottom - Medak and Mahbubnagar; dealing with the inability of the middle order districts, (except Khammam) to join the ranks of the top districts; and the lower contribution of non-income components to improvements in human development. These concerns need to be addressed.

Same is the case with social and occupational groups (Tables A2.10 to A2.13a). The rate of decline in inequalities, between male and female; SC, ST and BC vis-a-vis the Other Castes, occupational groups in rural as well as urban areas, should improve.

*Migration to urban did not fetch additional income to casual labour*

*Casual workers in agriculture and non-agriculture have a lower human development in rural Telangana*

The **Business As Usual** approach will not accelerate the rate of decline in inequalities.

## 2.3. Policy Changes for Human Development

It is evident from the analysis that there will not be any remarkable shift in the patterns of human development if earlier policies are continued. Hence the policy measures need to be reinvented.

### 2.3.1 Social Groups

The discrimination that exists in the social structure across the country encompassing gender, caste, class, and ethnic identity impinges on the development of all disadvantaged groups, particularly their standard of living, health and education. Women experience discrimination as members of a specific caste, class or ethnic group in addition to facing gendered vulnerabilities. The scenario is the same for occupational groups.

#### 2.3.1.1 Caste Groups

The discrimination against Scheduled Castes, Scheduled Tribes and Backward Castes is reflected not only in the retardation in their development in all aspects but also extends to the younger generations.

### Health Inequalities

Table A2.6 shows that inequalities in health status between the SCs and STs and other social groups are quite narrow. This is because we have considered coverage under safe motherhood and childhood facilities to measure the health status. But a low level of inequality in this may not necessarily result in less inequality in health outcomes on parameters like the nutritional status of children, since many other factors determine the nutritional outcomes for children. Stunted children, who fall below the required height for a specific age reflecting chronic malnutrition, constitute a larger proportion among the SCs and the STs as compared to the Other Castes in Telangana as mentioned below.

Nutritional Status across Social Groups (2013)				
Category	SC	ST	BC	OC
Stunting	39.0	32.2	34.4	24.1

Source: Galab *et al.*, (2014)

Stunting, thus, serves as a proxy for the health status in HDI of the social groups. Then the issue is

how to reduce the nutritional gap between SCs, STs and other social groups. The nutritional status of children is set in the first thousand days of their lives. The recovery of children from malnutrition is possible in the post-infancy phase also. But, this demands more investment on children than in infancy. Moreover, the older the children beyond infancy, the more the requirements. Growth recovery is positively associated with cognitive performance as long as it occurs early. Hence, caring and feeding practices during infancy among the SC and ST is crucial for reducing the nutritional gap across social groups (Liza *et al.*, 2014). Child marriages are more prevalent among SCs and STs and should be discouraged since there is a higher probability that children born to young mothers married below 18 years would be malnourished (Galab and Prudhvikar Reddy, 2015).

Children who have had an advantage in regard to mothers married at relatively older age and ensured of pre-natal care as well as better socio-economic status are found to be normal throughout the childhood period of five years. It is quite obvious that the children who are at a disadvantageous position in regard to these domains are persistently stunted. The one year old stunted children, who are provided adequate food and a diversified diet in a healthy environment at home, have the potential to move out of stunting when they grow five years old. However, the non-stunted children at one year old who were at disadvantage position (mothers married at relatively younger age and not ensured of pre-natal care as well as lower socio-economic status) have slipped into stunting when they grow five year old. Thus the intervention in age at marriage, prenatal care and socio-economic status are required to ensure that children do not remain stunted in pre-school years.

Children particularly disadvantaged, from households that grow only food crops had a less diversified diet and had a higher probability of being stunted. Households growing non-food crops have a more diversified food basket than households growing only food crops. This is most likely due to having disposable income available from selling non-food crops. It is possible that this disposable income might have enabled the households to diversify their diets, and access health care for improving the nutrition outcomes. Hence, the children from non-food growing households have

*Continuation of earlier policies cannot bring any remarkable shifts in human development*



*Supply of non-staple food items from the Public Distribution System may arrest the stunting among children by overcoming the negative effects of the rise in food prices*

*Washing hands before a meal and cleaning hands properly after defecation by children is equally important as having an individual toilet facility*

have lesser probability of being stunted. Persistent stunting is associated with long-term health problems of children, younger mothers, and growing only food crops, along with a less diversified dietary basket. Recovery from stunting is associated with a relatively higher income through non-agricultural activities (for food-crop-farming households) allowing a more diversified diet. Public policies that focus on improving the productivity of small farms, reducing cost of production to increase incomes from agriculture, and augmenting the income from non-farm activities would help the farming households to provide a more diversified dietary basket for their children. This would be more so in the case of small farmers from SC and ST communities. Further, encouraging households to create kitchen gardens would also help to enable women to provide a diversified consumption basket for their children (Galab and Prudhvikar Reddy, 2013).

Covariant shocks like a rise in the price of food commodities hurt the SC and ST children the most and contribute negatively to the linear growth of children. The children who were in a disadvantageous status with regard to nutrition at the age of one year had been hit severely when they reached five years due to a rise in food prices. The existing household income enhancement programmes of the government had enabled the households to cope with a less than 15% rise in food prices by obtaining more income from these programmes. The potential of the income enhancement programmes of the government tapers off when food prices rise beyond 15 %. Then households start utilizing food-based and non-food based coping mechanisms that result in micronutrient deficiency that in turn results in stunting. Of course, the noon-meal scheme did arrest stunting to some extent. The supply of non-staple food items from the Public Distribution System at cheaper prices may arrest the stunting among children by overcoming the negative effects of the rise in food prices (Galab and Prudhvikar Reddy, 2013). The food security of the household, mother's autonomy and access to government programmes relating to Integrated Child Development Scheme (ICDS), Mid-Day Meal (MDM) and National Rural Employment Guarantee Scheme (NREGS) do influence the nutritional outcomes of children.

The decomposition of the sources of the nutrition gap, between the SC and ST and other social groups

into two components-namely, variation in the determinants of nutrition and the realisation of the importance of the utilisation of these determinants-shows that the former component has contributed to 70 % while the remaining is due to lack of awareness. (Jose, 2014). In addition to the drive to reduce the inequalities in the access to endowments (determinants) that determine the nutrition gap, awareness building among the SCs and STs on the importance of the different determinants of nutrition is also important. The second component of the decomposition reflects more on behavioural changes that need to be given due priority to reduce the nutrition gap. Washing hands before a meal and cleaning hands properly after defecation by children is equally important as having an individual toilet facility. This type of low cost and zero cost practices that reflect behavioural changes go a long way in reducing the incidence of malnutrition among children across all social groups in general and those of SC and ST in particular.

### Education Inequalities

The enrolment of children has become almost universal in primary as well as in upper primary classes among all the social groups (Table A2.14). But beyond upper primary school, enrolment declines sharply among all the social groups, and especially among the children of SC and ST. Further, the children of SC and ST constitute a larger share of the children who drop out from primary and upper primary schooling, though this has been declining over time (Table A2.15). The percentage of children who never attended school in the age group of 5-14 in 2011-12 was higher among ST and SC than among other caste groups in Telangana (Table A2.16). The performance of children in terms of school achievements has declined over time, and more so among the SC and ST than the other social groups (Table A2.14). School related factors, along with the household related factors, are responsible for the dropout and the declining performance of the children.

The percentage of children enrolled in private schools has been increasing over time, due to the general perception that private schools provide good quality education as compared to the government schools. The enrolment of children from SC and ST is low as compared to other social groups (Table A2.14).

The performance of children in government schools is poor though the schools have better qualified teachers with command over the subjects they teach as compared to teachers in private schools. Thus, it is evident that the better qualifications and command over subjects of the teachers in government schools have not resulted in the better performance of children. Why is this so? The reasons for this can be located in the governance of the schools. The better governance of schools may provide an enabling environment to translate the abilities of teachers into better learning outcomes of the children.

The accountability of the teachers is one of the crucial dimensions that may ensure better governance. In contrast to the teachers in government schools, teachers in private schools are held accountable due to the fact that the parents feel that it is their right to negotiate with the teachers and the management of schools as they are paying fees (Marrow and Emma Wilson, 2014). The institutionalisation of parents' negotiations with the teachers through parent-teachers associations is the highlight of the private schooling system. The system ensures transparency, participation of parents in the negotiation processes and opportunity for all the parents cutting across all social groups without any discrimination. The school management committees in the case of government schools are the most crucial institutions to bring about accountability in school governance. But, most of the school management committees on the ground are found to be ineffective. The prevalence of strong women's self-help group federations at the village level and their participation through school management committees have institutionalised the negotiation process to make school governance transparent, accountable and participatory without discrimination. This process has contributed to a dramatic increase in the children's school achievements as well as those of children belonging SCs and STs (Galab *et al.*, 2013). An active civil society coupled with increasing literacy (Table A2.17) in Telangana may contribute to the effective governance of school management committees.

What are the issues of governance of government schools that need to be improved? The experience of schooling by children and the perceptions of parents on the quality of schooling, and classroom

observations on interpersonal interactions between teachers, teaching aids if any, and students in the classroom throw light on the issues of governance.

Parents felt that teachers should make sure that children are attending school and inform parents if they are not (Marrow and Emma Wilson, 2014). The experience of children clearly shows the insensitive attitude of teachers towards their responsibilities in terms of punctuality, correcting the homework of the students, questioning the students when they do not bring the correct books to the school and physical punishment in the school. These observations of the children indicate that the system needs urgent remedies. The children are not engaged properly during lessons through discussion/interaction with the whole class, guiding group work and talking/working with children to inspire children to learn more (Galab *et al.*, 2013; Galab *et al.*, 2014). Ensuring quality in early education is equally important (For details see Singh, 2017; Woodhead *et al.*, 2009).

### Income (Standard of Living) Inequalities

The aspirations of the SCs and STs have gone up, particularly those of the youth. State interventions in education and employment have brought changes in their life trajectories. Three broad categories of life trajectories of youth are emerging from among the social groups in the contemporary social structure of Telangana.

The emergence of a new generation of educated youth which desires to get into government jobs and new type of occupations that are quite different from the occupations of their parents is the first category of youth. This is the reason why they are continuing their education. Of the total youth population, this category constitutes a lower proportion, among SCs and STs (Galab *et al.*, 2014). The higher percentage of regular workers belonging to SC and ST in the top 20 percent expenditure class working in the government sector is a testimony to this trend (Table A2.18).

The second category of youth has discontinued their studies and entered into the labour market. They constitute around 38% among SCs and 24% among STs and only 30% Other Castes. Mostly they have gone into unskilled occupations in agriculture and non-agriculture at lower wage. There is also another group of youth which has not acquired adequate

*Accountability of teachers is one of the crucial dimensions that may ensure better governance of schools*

*Experiences of children clearly show the insensitivity of teachers towards their responsibilities in terms of punctuality, correcting the homework of the students, questioning the students when they do not bring the correct books to school and physical punishment in the school*

*Restoration and protection of the existing land and other natural resource base of the tribals, rise in agricultural productivity and better governance in tribal areas are the three crucial steps needed to improve the livelihoods of tribals*

educational achievements to become eligible for any government jobs/ new type of jobs and as a result they are forced to depend on the occupations of their parents. This is the third category of youth which is highly frustrated because they are neither able to come to grips with the occupations of their parents nor able to get into government jobs/ new type of jobs, given their aspirations. They are ultimately out of the labour market. This is the most vulnerable group. They constitute a relatively large proportion among the SCs and STs (around 15 %) as compared to the Other Castes (11%). The latter two categories of youth eventually contribute to the chronic poverty among the SC and ST groups. The presence of a higher percentage of households from the SCs and STs in the bottom 20% expenditure class provides substantial evidence to this trend (Table A2.19).

What should be the course of action to reduce the income inequalities between SC and ST and other social groups? The first category of youth should be encouraged to get into the private sector in the domestic job market and international job market. The second and third category of youth should be provided with appropriate skills to make them employable and to emerge as entrepreneurs.

Another category includes the relatively older generation which depends on agriculture and related occupations. The work participation rates were higher among SCs and STs as compared to other groups in rural as well as urban areas of Telangana during 2011-12 (Table A2.20). The incidence of child labour was high (Table A2.21). The unemployment rates were low (Table A2.21). The percentage of poor was higher for ST and SC as compared to the other caste groups, despite higher work participation including children and a low unemployment rate (Table A2.22).

This means that the workers from SC and ST were working in low paid economic activities. Thus there was a high percentage of the working poor among these social groups compared to other social groups in Telangana. Moreover, they were working more in the informal sector where social security is almost non-existent, in contrast to the other social groups. The dependency on agriculture was high among SC and ST as compared to other social groups. There were fewer self-employed persons and more casual labour in agriculture as well as non-agriculture

among SC and ST, in contrast to other social groups. Further, the diversification to non-agriculture was relatively very low among SC and ST (Tables A2.23 to A2.25).

This category of households should be provided with the following support:

In case of STs, declining forests resources, emergence of settled agriculture, penetration of commercial crops in the cropping pattern, expansion of livestock and the problems associated with mainstream agriculture, the transformation process that the older generation have to grapple with in carrying out their livelihoods. The developments due to neo-liberal reforms have led the national and state governments to indiscriminately exploit resources like water, minerals and forests located in tribal areas for removing infrastructural bottlenecks that are emerging in mainstream economy to sustain and expand economic growth. This has led to deforestation, construction of dams and extraction of minerals. All these have destabilized the livelihoods of tribals and led to ecological destruction in the forest areas. Moreover, growing inequalities among the tribes is also a matter of serious concern. These are the new causes of deprivation among tribals.

The saga of unsuccessful attempts for the resettlement and rehabilitation of tribals is a part of their unforgettable memories of agony because of a sharp deterioration in their living and livelihood conditions due to displacement has been a harsh reality. The major steps of policy action required to improve the living conditions of this category of tribes include restoration and protection of the existing land and other natural resource base, raising agricultural productivity and improvement of governance in tribal areas (Rao, 2015).

In case of SCs, the following support should be provided: The landless should be provided with land. Cost reducing, yield enhancing, resource conserving, low-energy-intensive, local resource-based agricultural technologies should be provided to make agriculture viable, sustainable and remunerative. Post-production technologies and allied agricultural activities should be provided to overcome the low landholding size of the farmers. Collective institutions of these farmers should be promoted to negotiate with the market and the state so that they can get inputs and sell the agriculture produce at the right prices.

For all the categories of households among the tribals, the recent acts like the Andhra Pradesh Scheduled Castes Sub-Plan and Tribal Sub-Plan (Planning, Allocation and Utilization of Financial Resources) Act, 2013 (Act No.1 of 2013), Forest Rights Act (FRA) and Panchayats (Extension to Scheduled Areas) Act (PESA); and in the case of SCs, the Andhra Pradesh Scheduled Castes Sub-Plan and Tribal Sub-Plan (Planning, Allocation and Utilization of Financial Resources) Act, 2013 (Act No.1 of 2013), need to be modified to suit the socio-economic transformation of tribals and scheduled caste households for ensuring a high standard of living.

### 2.3.2 Gender Groups

More than half of women (53%) aged 15-49 have a normal nutritional status, while 28% are under-nourished (thin) and 19% are overweight (obese). Fifty eight percent of women (in 15-49 years age) in Telangana have anaemia and about 6% among them have severe anaemia. Prevalence of chronic illness that lasted for over a month in a year was higher among females (8%) as compared to male (7%). Further, more females suffered from hypertension (22% against 19% among males) and goitre (4% against 1%). Similarly, more females among older persons are diagnosed with hypertension (31% as compared with 25% among males) (for details see DLHS-4, 2012-13)

Apart from the gender differences in general health status, the reproductive health status has also a strong bearing on the human development in general and women particular. There are serious concerns that need to be addressed in this regard. A fairly high proportion of pregnant women availed of ante-natal care (ANC) facility in their first trimester but failed to avail at least four ANC during pregnancy. This highlights the urgent need to increase ANC coverage in the first trimester to cent percent. The complete ANC package (3+ ANC visits, 1+TT injection and 100 IFA tablets) for pregnant women remained at 42 percent at the state level. Though institutional deliveries increased over time, deliveries at home are still taking place in Adilabad and Mahabubnagar, due to lack of adequate health care

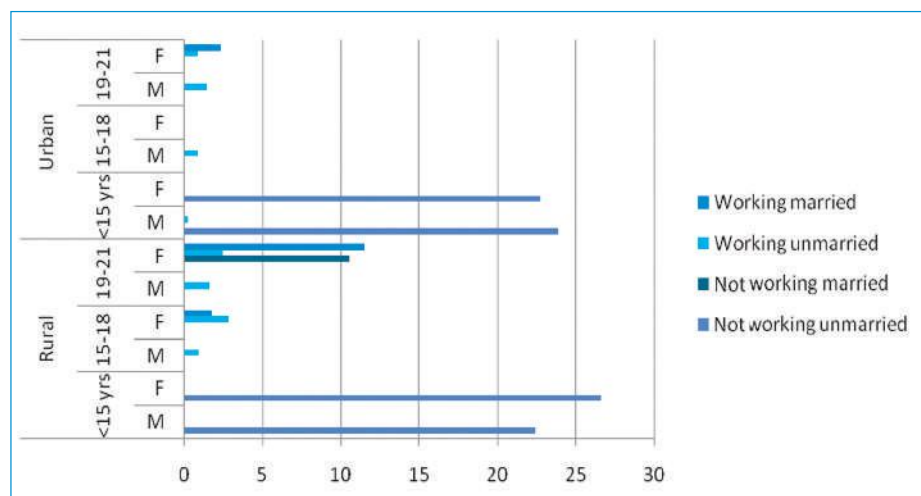
facilities for delivery at public health institutions. Maternal mortality rate is high in these districts. Caesarean sections were carried out in 58 percent of pregnancies which is on the high side as per the norms of the World Health Organisation. There are wide inter-district variations in MMR ranging from 71 in Hyderabad to 152 in Adilabad (for details see Chapter 6 of this Report).

Thus, the general and reproductive health of women demand modifications in the health policy pursued earlier for ensuring better health status for women, in particular, in Telangana State.

Child marriage is one of the major causes for the lower enrolment of girls in secondary school. The age-wise distribution of girls and boys along with education and marital status shows the trajectory of adolescent youth. The NSSO data for Telangana state indicates that girls who never attended school in the age groups of less than 15 years were neither working nor married, but girls in the age groups of 15-19 and 19-21 were mostly in the category of not working and married and to some extent were working and married. This is pronounced in rural areas than in the urban areas (Fig. 2.11). The pattern is similar even among girls who were enrolled in schools but were currently not attending (Fig 2.12). Thus child marriage is the biggest constraint in shaping desired educational trajectory of girls. The Government of Telangana has to work with civil society organisations to alleviate the social practice of child marriages.

Gender inequalities in income had fallen in 2011-12 in all the districts with the exception of

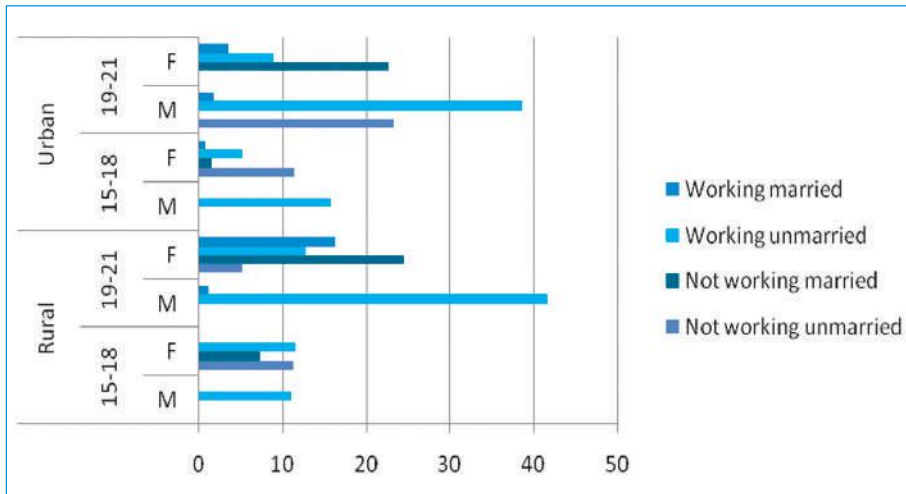
Fig. 2.11: Work and Marital Status of Rural and Urban Youth 'Never Attended School'



Source: Estimated based on the data from NSSO (2011-12)



Fig. 2.12: Work and Marital Status of Rural and Urban Youth 'Currently Not Attending School'



Source: Estimated based on the data from NSSO

in recent times in Telangana as elsewhere. Women are concentrated as agriculture labour than as cultivators. About 20 percent of holdings (mostly small) and cultivated land is operated by women but mostly without title deeds. This deprives them of the benefits (credit, input subsidy and insurance) given to farmers. Identifying women as farmers and by making land accessible to them through lease market and/or land distribution and/ or land purchase programmes by state would go a long way in improving the human development of women and their households (Revathi, 2017).

*Identifying women as farmers and by making land accessible to them would improve human development of women and their households*

RangaReddy. The female casual wage rate in 2011 was the lowest in Ranga Reddy followed by Warangal and Medak, while Adilabad had the highest female wage rate after Hyderabad. The male female wage ratio had increased in favour of men in Ranga Reddy district despite a sharp rise in GDDP. In Mahbubnagar and Hyderabad, there had been a proportionately higher rise in casual wage rates for women thus reducing gender differentials in earning. The reasons for the very low wage increase in Ranga Reddy may be due to the rural-urban divide and men migrating to urban pockets while women continued to work in rural areas at the prevailing low wage rate. The female work participation rate was also low in Ranga Reddy at 27 percent in 2011. Employment opportunities and female wages were low in rural areas due to the dependence on rain fed agriculture. Intervention in the labour market through MGNREGS in this district has not had much impact on wages. Female participation in MGNREGS work was low though it had, to some extent, prevented day to day migration to urban locations for work (Galab et al., 2008). Thus, policy intervention is warranted in order to raise the wage levels of women to increase their human development. In agriculture also there is increased participation of women in place of men

*Education, skills and access to social safety nets would put the occupational groups working in the unorganised sector of the urban and rural economy on the better human development trajectory*

### 2.3.3 Occupational Groups

The human development status of the self-employed in agriculture and allied sectors was slightly better than for casual labour in agriculture and other unskilled labour in rural areas. The level of human development was higher among professional/senior executives and skilled workers in urban areas. This could be attributed mainly to their level of education and asset ownership. Further human development of skilled workers was next to professionals. But the gap between them in educational development was very high. The gain in income has not been transformed into social development for the skilled workers.

The groups possessing skills and land gain in terms of HDI. The economic growth and human development policies of the state have not impacted the different occupational groups such as the self-employed in agriculture, casual labour in services and agriculture. These groups operate in the unorganized sector with limited access to the safety nets offered by the state. Thus, education, skills, and access to social safety nets would put the occupational groups working in the unorganised sector of the urban and rural economy on the better human development trajectory.

## Box 2.1

### Handloom Weavers in Telangana

*Handloom weaving had been an important segment of the non-agricultural rural economy of Telangana from times immemorial. A traditional activity involving a high level of manual skill, handloom weaving was next only to agriculture in its share of total employment. Weaving is a home-based activity, involving all members of the family and is the main source of income for the entire family.*

*Handloom weaving has been steadily sliding into a crisis since the 1980s in Telangana. The total number of active looms in Telangana by the most recent count (2013) was 28,643, which is a third of the number in 1995. At present, handloom weaving continues in some strength only in the districts of Mahbubnagar, Karimnagar, Medak, Nalgonda and Warangal.*

*This crisis has resulted in three levels of stressors for the weaving community as well as for the rural economy of the state. The first, what has happened to the weavers who are no longer in the activity, and to their families? Second, what is the status of the weavers who have continued in the activity? Third, what is the situation of the younger generation who aspire to enter into mainstream occupations?*

*Most out-of-work weavers migrated to power loom centres like Bhiwandi and Surat for work, accepting the disruption of their traditional community life. But, around 2000-2001, there was also much distress and many weavers in Telangana finally committed suicide. Younger women members have shifted to beedi rolling, while a few also take up work under MGNREGA.*

*Competition from power looms has been the major factor in the crisis faced by handlooms. Weavers in Karimnagar and Medak are under severe stress. Most have shifted to frame looms which were promoted on the assumption that this would improve the productivity of the weaver. While it is true that a frame loom could produce 300 metres of cloth a day, this still could not compete with power looms on cost, irrespective of the quality of the product. Further, finer quality saris and materials in which the weaver has a quality advantage cannot be woven on frame looms. The net result is that weaving is now concentrated on low-priced commodities and there has been a steady process of de-skilling which pushes the weaver into the vicious circle of low cost products, diminishing skills and low wages.*

*On an average, a weaver has a total family income of Rs. 7450 a month. This includes his earning as a weaver, his wife's wages from beedi rolling and his weaver's pension.*

*The younger generation does not want to take up the traditional occupation of weaving. Children of weavers had studied up to standard 12 (Intermediate) but lack any skills and generally work in the informal sector. The next generation (grandchildren of weavers) are going in for higher studies, but their employability in terms of skills is still very poor, and most are unemployed. While many of the younger educated persons aspire to get a government job, their chances of getting these jobs are very limited.*

*Strangely, neither the cooperatives nor the master weavers show any entrepreneurial initiative to promote the marketing of finer fabrics, even of Gollabhama saris for which the region is very famous.*

*Other than the general welfare schemes, there are schemes which are meant specifically for weavers which include monthly pension, health, life and group insurance. In spite of what looks on paper to be comprehensive coverage to ensure the welfare of weavers, the ground realities tell a different story. Our field work in Karimnagar and Medak shows that access to these programmes is very uneven mainly because information on these programmes often does not reach the weavers.*

*Source: An extract from a study by Kanakalatha Mukund and B. Syama Sundari on (unpublished) "Handloom Weaving in Telangana in dire straits", inputs from Field Survey conducted in 2013-14.*

## Economic Growth and Human Development

### 3.0 Introduction

The basic objective of this chapter is to identify the patterns of economic growth that would ensure further improvement in human development and reduction in the existing inequalities in human development in Telangana State.

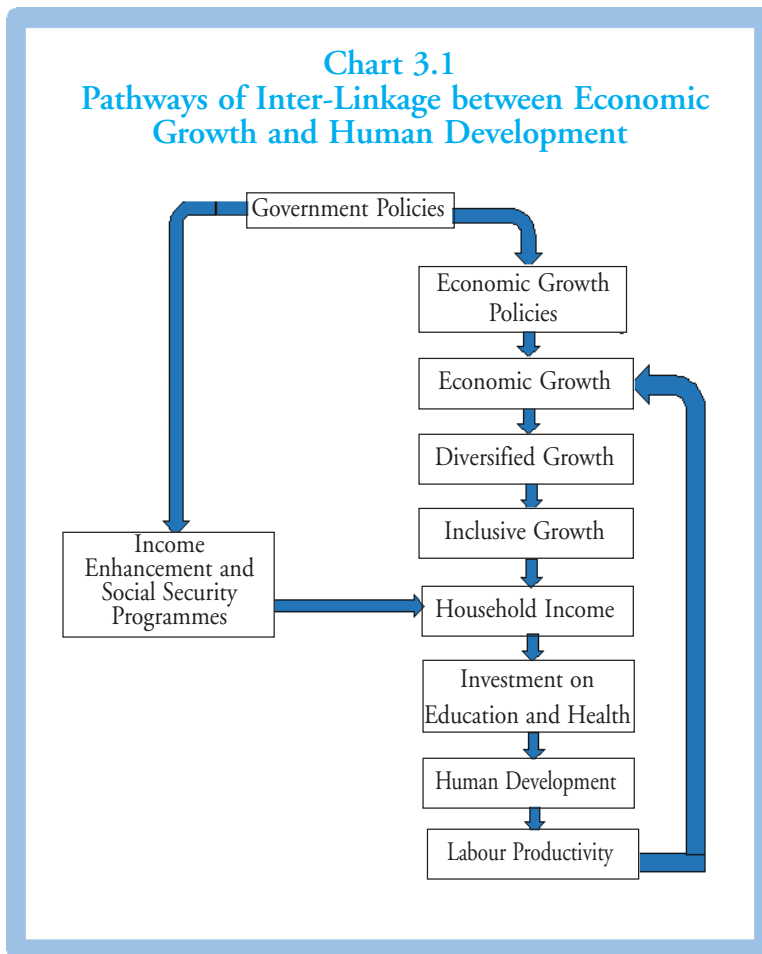
The relationship between economic growth and improvements in human development is two way causative. Economic growth and growth in human development should have a positive and strong relationship. Also, the nature of economic growth determines the growth in human development. The diversification of growth from agriculture to non-agriculture improves incomes in agriculture as well as in non-agricultural sectors (Industry and Service sectors) due to improvement in the productivity of both the sectors. This diversification should contribute to both employment and income of households. Economic growth should also be inclusive which means the benefits of economic growth should be shared widely to enhance household incomes for investing on human development. Further, the growth in the income of households should have links with the growth in human development.

Thus, level of economic growth, nature of economic growth, percolation of economic growth to household income and link between growth in household income and improvements in human development are the pathways that connect economic growth with improvements in human development.

Improvement in human development should lead to growth in labour productivity. This reflects the connect between improvement in human development and economic growth, since growth in labour productivity contributes to economic

*Weakening relationship between economic growth and improvement in human development assumes importance in the context of high economic growth*

**Chart 3.1**  
Pathways of Inter-Linkage between Economic Growth and Human Development



growth. This is reverse causation in the relationship of economic growth and growth in human development (Chart 3.1).

All these conditions should go hand in hand to provide an ideal environment that connects economic growth with growth in human development and vice versa. The examination of these relationships assume enormous importance in the context of discourse about the weakening relationship between economic growth and improvement in human development especially in the background of high economic growth (World Human Development Report, 2014; Rangarajan, 2014).

The question is whether the pattern of economic growth generated in Telangana, due to the public policies pursued in the combined state, had all these characteristics to address the twin objectives of improving human development and reducing its inequalities. This is the line of analysis this chapter addresses.

### 3.1 Economic Growth and Improvements in Human Development

Economic growth, during 2004-05 and 2011-12, was higher than the state average in the top human development districts-Hyderabad and Ranga Reddy-and one of the bottom human development districts-Medak. All the other districts experienced lower economic growth than the state average. But, the improvements in human development were higher than the state average among some of the middle and all the bottom districts. This indicates that there was no strong relationship between economic growth and improvement in human development across the districts (Table A3.1). This is counterintuitive and this puzzle requires further analysis. In order to conduct the analysis, the districts have been classified according to level/growth of Per Capita Gross District Domestic Product (PCGDDP) and level/growth in HDI w.r.t the average of ten districts. The categories are (i) High level/growth of PCGDDP-High level/growth of HDI (ii) Low level/growth of PCGDDP-High level/growth of HDI (iii) Low level/growth of PCGDDP-Low level/growth of HDI and (iv) High level/growth of PCGDDP-Low level/growth of HDI. The districts under categories (i) and (iii) are defined as districts with strong linkages between PCGDDP and HDI and the districts under the other two

categories are defined as districts with not strong/weak linkages. Similar classification is adopted in the case of health and educational status to examine their growth linkages with economic growth.

Of the top order districts, the relationship between economic growth and growth in human development is strong in Ranga Reddy district, while it is weak in Hyderabad during 2004-05 and 2011-12. This is because of adequate economic growth in the case of former, whereas inadequate economic growth in the case of latter to influence improvement in human Development.

In case of the bottom districts, this relationship is strong in Medak due to higher economic growth, despite the weak linkage between the level of PCGDDP in 2004-05 and the level of human development in 2011-12. Nizamabad and Mahbubnagar districts were not able to maintain the relationship because of inadequate economic growth.

Among the middle order districts, Adilabad, Khammam, and Nalgonda districts were not able to maintain the relationship due to inadequate economic growth. However, Warangal and Karimnagar were able to overcome the initial weak linkage and could establish a strong linkage between the two due to adequate economic growth.

Apart from (in) adequacy of economic growth, the other important issue that needs to be examined is whether economic growth has been translated into growth in human development. If so, how? Economic growth is not related to improvements in human development in case of Hyderabad, mainly because the benefits of higher economic growth have not been shared widely. This is the reason for the weak linkage between the two (Table A3.2). This clearly indicates that economic inequalities have constrained the flow of income benefits of growth to households. It is also evident that growth in household income has contributed to growth in human development, despite the absence of wider sharing of benefits of economic growth. This is obviously due to the incomes that accrued to households through income enhancement and social security programmes of the government. Thus, public policies have come to the rescue of the households in Hyderabad district to achieve the present level of growth in human development.

*Inadequate economic growth has weak linkages with improvement in human development*

*Percolation of income benefits of growth (inclusive growth) has strong linkages with the improvement in human development*



*Public policies have come to the rescue of the households to achieve the present level of growth in human development*

Ranga Reddy has achieved higher growth in human development as well as in economic growth despite their higher initial base. This means that higher economic growth has enabled this district to achieve higher growth in human development (Table A3.3 and Table A3.4). This is mainly because of diversification to non-agricultural sectors with higher growth in household employment and income. The association between improvement in human development and economic growth is present in the district. There is also a wider sharing of growth benefits which in turn led to growth in investment on human development. Thus, all the conditions required for connecting economic growth and growth in human development are in place in this district. The comparison between Hyderabad and Ranga Reddy districts supports the argument that inclusiveness is crucial in linking economic growth with growth in human development and vice-versa.

In spite of all the unfavourable conditions for linkage between economic growth and improvement in human development, Nizamabad, among the bottom human development districts, has registered the highest growth in human development. This is because of the income enhancement and social security programmes of the government. Though Medak has achieved economic growth and improvement in human development above the state averages, it has not achieved desirable growth in human development considering its higher economic growth. Moreover all the conditions of economic growth are favourable in this district. This may be due to the higher initial human development base and also due to the fact that the benefits of economic growth might not have benefited the local population of Medak district adequately. Mahbubnagar has obtained higher growth in human development despite its lower economic growth. This is due to inclusive economic growth.

Among the middle order human development districts, Warangal and Karimnagar have correlation between economic growth and growth in human development because of inclusive growth. However, there is no correlation between agricultural growth and growth in human development in Krimnagar district due to the non-percolation of the benefits of higher agricultural growth to wider sections. Khammam and Adilabad have attained higher

growth in human development compared to their economic growth because of income enhancement and social security programmes of the government. In case of Nalgonda district, there is absence of relation between economic growth and human development. Diversified growth has taken place with too little enhancement in household income to invest on human development. Further, the benefits of income enhancement and social security schemes of the government were also not adequate enough to enhance household income and thereby to improve human development.

### 3.1.1 Economic Growth and Improvement in Health status

The relationship between economic growth and growth in health status during 2004-05 and 2011-12 has turned out to be weak in all the districts except Nizamabad (Table A3.5). This is due to lack of correlation between economic growth and improvements in health status during 2004-05 and 2011-12 (Table A3.6). Yet, there were improvement in health status in the districts of Ranga Reddy, Warangal, Karimnagar, Nalgonda, Mahbubnagar and Medak (column 9 of Table A3.7). This is obviously due to government expenditure on health. In the case of Hyderabad, Khammam and Adilabad districts, there was no evidence of wider sharing of benefits of economic growth as noted earlier. But there is growth in household income from the income enhancement and social security programmes of the government. Hence there is strong linkage between household income and growth in health status in these districts (column 10 Table A3.7). It appears that additional household income so obtained has been invested on health care. In the case of Nizamabad, economic growth has not been widely shared but has contributed to better health status. This may be due to public investment on health.

### 3.1.2 Economic Growth and Improvements in Educational status

The strong linkage between economic growth and growth in educational status is in place in the districts of Ranga Reddy, Warangal, Adilabad and Medak. This is due to adequate economic growth in these districts during 2004-05 and 2011-12 (Table A3.8). The absence of a strong linkage in the rest of the districts is due to inadequate economic growth.

The strong linkage between economic growth and growth in educational status (column 5 Table A3.9) in Ranga Reddy, Warangal and Medak districts is also due to the wider sharing of economic growth benefits (column 9 Table A3.9) and thereby investment on education (column 10 Table A3.9). But this scenario is not found in Karimnagar, Nalgonda and Mahbubnagar districts (columns 9 and 10 Table A.3.9) where the growth in household incomes due to better sharing of economic growth was not invested in education. Yet there is growth in educational status. This may be due to government's expenditure on education. On the other hand, Hyderabad, Khammam, Adilabad, and Nizamabad districts have not experienced the wider sharing of benefits of economic growth. Yet there is growth in educational status in these districts. The income enhancement and social security programmes of the government have come to the rescue of these districts (except Adilabad) to bring improvement in educational status. The government expenditure on school education has facilitated the improvement in educational status in Adilabad district.

### 3.2. Improvement in Human Development and Economic Growth

The improvement in human development should also contribute to economic growth. One of the pathways that connect human development with economic growth could be the labour productivity that emanates from human development. Here the attempt is not to estimate labour productivity and assess the relationship of human development-labour productivity-economic growth. But, an effort is made to unravel the circumstantial evidence from the existing data in this regard.

It is evident that there is a strong inter-linkage between improvements in human development and economic growth in Ranga Reddy, Warangal, Karimnagar and Medak. All these districts, except Karimnagar, have a strong inter-linkage between growth in educational status and economic growth. It can be inferred from these two streams of evidence that the strong inter-linkage between economic growth and improvement in human development is partly due to the strong linkage between economic growth and improvement in educational status. Thus, it is evident indirectly that improvement in educational status have contributed to economic

growth. Moreover, this is one of the reasons for the higher economic growth in Ranga Reddy and Medak districts and for the correlation between economic growth and growth in human development in Warangal district. At the same time, this is also one of the reasons for the absence of correlation between economic growth and improvement in human development in Karimnagar district.

### 3.3 Emerging Concerns

The pattern of economic growth identified above is the outcome of the economic growth policies pursued in the combined state. Interfacing the pattern of economic growth with that of human development has brought to the fore many concerns that demand the modification of growth policies to improve human development and to reduce its inequalities. The economic growth achieved in the districts is inadequate to lead to a marked growth in human development. The concerns emerging from the analysis are in:

- ◆ Integration of economic growth and human development policies seems to be absent.
- ◆ Targets to achieve economic growth should be set for each district. Similarly, targets for growth in human development should also be fixed for each district. These targets must be integrated with that of the state.
- ◆ Growth in agriculture and growth in human development are not moving together. The failure of agricultural marketing institutions in providing remunerative prices to farmers may be one of the dominant factors that has contributed to lower growth in the incomes of the farmers, despite high agricultural growth. This has led to lower growth in investment on human development.
- ◆ Similarly, growth in non-agriculture is weakly linked to growth in human development. Distress diversification that is diversification into non-agricultural activities without growth in non-agricultural incomes, is responsible for the weak linkage between non-agricultural growth and growth in household incomes.

*Hence, high and inclusive, diversified and productivity-led economic growth is imperative to improve human development and reduce its inequalities in Telangana state.*

*High and inclusive, diversified and productivity-led economic growth is imperative to improve human development and reduce its inequalities in Telangana State*

# Development Expenditure : Human Development and Economic Growth

### 4.0. Introduction

This chapter identifies the distributional pattern of public funds relating to social and economic services that would ensure further improvement in human development and economic growth respectively and contribute to a reduction in their existing inequalities across the districts of Telangana State.

Government expenditure, particularly expenditure on social and economic services, in short, development expenditure, is one of the dominant factors that determines human development and economic growth. The level, growth and pattern of development expenditure reflect the expenditure policies of the government. Expenditure on social services contributes to human development in general and education and health, the components of human development in particular. Labour productivity, of the outcomes of human development, is also a determinant of economic growth. Hence, the conversion of human development for improving labour productivity contributes to the further expansion of economic growth. Thus public expenditure on health and education influences the human development-labour productivity-economic growth linkages. Similarly, public expenditure on economic services (economic activities) contributes to economic growth.

The human development expenditure policies pursued during 2004-05 and 2011-12 have been captured through the levels and patterns of expenditure on social and economic services during 2004-05 and 2011-12. The expenditure patterns are interfaced with human development and economic growth to identify the concerns related for the State of Telangana. Three-year averages of

state government expenditures of 2004-07 and 2010-13 have been used to represent the expenditure of 2004-05 and 2011-12 respectively for the analysis. The present human development outcomes are the result of government expenditure on human development over the years as well as at present. Hence it is assumed in this study that the annual actual expenditure (accounts) for any year or recent years towards social and economic services are in line with that of earlier years. The terms **Allocation** and **Expenditure** are used interchangeably in this chapter.

The focus of the analysis in this chapter is below the state level, i.e., at the district level. This level of analysis enables us to identify policy concerns from the bottom-up approach. More specifically, this chapter addresses the policy questions such as: What are the concerns regarding the expenditure policies pursued in the combined state of Andhra Pradesh? What are the changes that need to be made in the government's expenditure policies to suit the human development and economic growth requirements of Telangana State?

In order to conduct the analysis, the study has categorised the districts according to the level and growth of public expenditure on social and economic services and level and growth of HDI. They are (i) High Public Expenditure and High HDI (ii) Low Public Expenditure and High HDI (iii) Low Public Expenditure and Low HDI and (iv) High Public Expenditure and Low HDI. The districts under category (i) are defined as the districts with funds adequately allocated and the districts under category (ii) are defined as the districts that efficiently utilised the funds allotted. The districts under category (iii) are defined as districts with inadequate funds and the districts under category (iv) are defined as the

*Present status of human development is the result of government expenditure on human development over the years as well as at present*

districts that inefficiently utilised funds. This enables to examine the relationship between public expenditure and HDI to assess (in)adequacy of public expenditure and (in)efficiency of utilisation of public funds. Similarly the districts under category (i) and (iii) are defined as districts with strong linkages between growth of public expenditure and growth in HDI and the districts under other two categories are defined as districts with weak linkages.

#### 4.1. Expenditure on Social and Economic Services

There is a need to examine the public expenditure patterns in 2004-05 and their relationship to the human development outcomes in 2011-12 to assess the (in)adequacy of funds allotted and (in)efficiency in the utilisation of the allotted funds. The public expenditure decisions by 2011-12 should have been taken to overcome not only the deficits due to the inadequacy in the allocation of funds and inefficiency in their utilisation in 2004-05 but also to reduce inequalities in human development by 2011-12. The growth in fund allocation between these two periods should cover both these requirements. Thus, ultimately, more funds should flow to areas deficit in human development, the absence of which fails the public expenditure policies to respond to inequality concerns in human development. Public expenditure has been analysed in two respects: social services and economic services. The allocation of funds and growth in funds allocated across the districts are presented in Tables A4.1 & A4.2. Hyderabad district has been excluded from the analysis (For details see Chapter 4 Appendix).

##### 4.1.1 Expenditure on Social Services and Human Development

The relationship between growth in per capita social services expenditure and improvements in human development is found to be insignificant. This indicates that the public funds were not allocated on the basis of the human development requirement of the districts. A disaggregated analysis at the district level shows that growth in social services expenditure had a strong linkage with growth in human development only in the districts of Warangal, Karimnagar, Khammam and Medak (Table A4.3). However, there was a weak linkage between the two in all the other districts-Ranga Reddy,

Adilabad, Nalgonda, Nizamabad, and Mahbubnagar (Table A4.3).

Warangal and Khammam have achieved growth in human development during 2004-05 and 2011-12 due to the allocation of adequate funds by 2011-12. Karimnagar has achieved a higher level of human development in 2011-12 at a relatively lower level of public funds in 2004-05. This means that Karimnagar has utilised funds efficiently. Moreover, the allocation of adequate funds by 2011-12 has enabled Karimnagar to realize higher growth in human development. Further, Medak district has had higher growth in human development. This is due to the allocation of adequate funds by 2011-12 to cover the deficit in the funds allocated in 2004-05. Ranga Reddy had achieved a higher level of human development by 2011-12 due to efficient utilisation of public funds in 2004-05 (Tables A4.3 and A4.4). But the inadequate allocation of public funds by 2011-12 has stunted the growth in human development in this district.

Growth in expenditure has weak linkage with improvements in human development in the bottom two districts-Nizamabad and Mahbubnagar (Tables A4.3 and A4.4). These districts were allocated inadequate funds in 2004-05. These districts were not allotted adequate funds even by 2011-12. Hence, inadequate growth in public expenditure has constrained the growth in human development in these districts.

The inadequate allocation of funds by 2011-12 has constrained growth in human development in Adilabad, while inefficient utilisation of funds has handicapped Nalgonda in achieving higher growth in human development.

##### Health Expenditure and Health Status

Growth in per capita health expenditure and improvement in health status are insignificantly correlated indicating that public funds were not allocated on the basis of health requirements in the districts. Growth in health expenditure had resulted in improvement in health status in five districts-Ranga Reddy, Warangal, Adilabad, Nalgonda and Nizamabad. This relationship was absent in the other four districts-Karimnagar, Khammam, Mahbubnagar and Medak, (Table A4.3).

*Public expenditure policies should respond to inequality concerns in human development*



*Funds allotted in health sector by 2011-2 were inadequate to cover the deficit in 2004-05 to achieve improvement in human development*

Ranga Reddy district had achieved higher health status by 2011-12 through utilising public expenditure on health efficiently in 2004-05 (Table A4.4). Adequate public expenditure allotted by 2011-12 has also brought improvement in health status in this district. Among the middle order districts, the allocation of adequate funds by 2011-12 enabled Warangal to achieve higher growth in health status. Adilabad has utilised inefficiently the funds allocated in 2004-05. But adequate funds were allocated in 2011-12 to accomplish higher growth in health status in this district. The public funds allotted for health in 2004-05 were inadequate for Nizamabad. But, the funds allocated by 2011-12 were adequate enough to cover the deficit in funds allocated in 2004-05 and hence health status has improved in this district

The public funds allotted for health in 2004-05 were inadequate for the bottom three districts, Nizamabad, Mahbubnagar and Medak (Table A4.4). The funds allotted by 2011-12 were also inadequate to cover the fund deficit in 2004-05 to achieve growth in human development in the latter two districts, while the former district was allotted adequately to improve health status. Khammam district has utilised funds inefficiently in 2004-05. Moreover the funds allocated by 2011-12 were also inadequate to bring improvement in health status in this district. But Adilabad, in contrast to Khammam, was allocated adequate funds by 2011-12 to achieve higher growth in health status. Nalgonda district had higher growth in health status due to the allocation of adequate funds by 2011-12 to cover the deficit in the allotment of funds in 2004-05.

### **Educational Expenditure and Educational Status**

In the case of education, there is no correlation between per capita educational expenditure and educational status across the districts. But, there was a strong linkage between the growth in expenditure on education and improvement in educational status during 2004-5 and 2011-12 in five districts-Warangal, Khammam, Adilabad, Nizamabad and Medak. This relationship was absent in the other four districts, Ranga Reddy, Karimnagar, Nalgonda and Mahbubnagar (Table A4.3). This indicates that funds have not been allocated to the districts in accordance with their educational status.

Among the bottom human development districts, the allotment of funds by 2011-12 for Medak and Nizamabad was adequate enough to achieve higher growth in educational status. The inefficient utilisation of funds has failed Mahbubnagar to achieve improvements in educational status. Among the middle order districts, Khammam and Adilabad have attained improvements in educational status. This is due to both the allocation of adequate funds in 2004-05 as well as by 2011-12. Interestingly, though the funds allotted in 2004-05 were not efficiently utilized, Warangal has reached higher educational status due to allocation of adequate funds by 2011-12.

Ranga Reddy district has not been allocated adequate funds by 2011-12 to achieve higher growth in educational status. Similar is the case with Karimnagar district. Funds allotted for Mahbubnagar by 2011-12 were not adequate for the district to reach higher growth in educational status, but this was primarily due to the inefficient utilisation of funds. The inefficient utilization of funds failed Nalgonda from achieving an enhancement in educational status (Table A4.4).

### **4.1.2 Expenditure on Economic Services and Economic Growth**

Public expenditure on economic services, through economic activities, would contribute to economic growth. The relationship between growth in per capita expenditure on economic services and economic growth is weak across the districts. This indicates that the expenditure has been made independent of the requirements for raising economic growth. This is evident from the rank correlation coefficient. This reflects the failure of the public policies in the allocation of public funds in line with the requirements for enhancing economic growth.

A disaggregated analysis at the district level indicates that the funds allocated under economic services in 2004-05 were not adequate enough to enhance per capita gross district domestic product (PCGDDP) in the middle order human development districts (Warangal, Karimnagar and Nalgonda) and the two bottom human development districts (Nizamabad and Mahbubnagar). The inefficient utilisation of funds allocated (Adilabad) and inadequate allocation of funds (Karimnagar)

constrained to develop a link between public funds and PCGDDP. The allocation of adequate funds enabled Ranga Reddy and Khammam districts to establish link between allocation of funds and PCGDDP.

But the allocation of funds by 2011-12, in the backdrop of the funds allocated in 2004-05, among these districts brought different pattern of linkages between growth in expenditure for economic services and economic growth. The inadequate growth in allocation of funds by 2011-12 handicapped Ranga Reddy, Warangal, Karimnagar, Khammam and Nizamabad to establish strong linkages between the two. On the other hand, allocation of adequate funds by 2011-12 has enabled Adilabad and Nalgonda (middle order districts), and Mahbubnagar and Medak (bottom districts) to achieve higher economic growth.

On the whole, the (in)adequate allocation of funds and (in)efficiency in their utilisation under social and economic services have determined the inter-linkage between economic growth and improvement in human development.

The analysis brought out some puzzles like lower social and economic expenditure is associated with higher level of human development and vice versa. Further research is required to find out the reasons for these puzzles.

## 4.2 Summary and Policy Suggestions

### Summary of the Analysis

Public funds have not been allocated on the basis of the requirements of growth in human development and its components on the one hand

and linkages between improvements in human development and economic growth on the other. Also it has not been made to reduce their inequalities among the districts. Above all, it is also evident that there exists inefficient utilisation of allocated funds.

### Policy Suggestions

- ❖ A radical departure from the public expenditure policies, pursued in the combined State of Andhra Pradesh, is the need of the hour in Telangana State. This is more so in the context of initiatives of decentralisation in terms of reorganising of 10 districts into 31 districts.
- ❖ More public funds should be allocated on the basis of requirements of the top, the middle and the bottom human development districts to improve their status and simultaneously to reduce inequalities among them.
- ❖ The funds allocated should be utilised efficiently. The administration of the departments implementing the related programmes should be improved. The following initiatives may facilitate to improve the governance of departments:
  - A Human Development Monitoring Unit (HDMU) should be established by the Government of Telangana to monitor human development from time to time.
  - Constituency-wise analysis of human development status needs to be conducted and should be communicated to the people's representatives.

# Educational Institutions and Educational Development

## 5.0 Introduction

This chapter is an attempt to identify the concerns about the functioning of the educational institutions inherited from the combined State of Andhra Pradesh and to address them to improve the quantity and the quality of education and reduce educational inequalities across space (districts, rural and urban areas) and social groups (caste groups and gender groups) in Telangana State. The functioning of these institutions is assessed on the basis of educational inputs, educational outcomes, the extent of private educational institutions and the response of communities. The educational inputs include human resources (teachers) and physical infrastructure (number of class rooms, toilet facility for girls, drinking water facility for children, computer facility for children and ramp facility for specially-abled children). The educational outcomes comprise attendance rates, enrolment rates and dropout rates. The presence of private schools is measured in terms of the percentage of private schools in the total number of schools (government and private schools). The community response has been measured in terms of the choice of parents regarding enrolling their children between public and private schools.

The relationship between the educational inputs provided by the State and educational outcomes has been assessed to examine the (in)adequacy of the inputs provided and (in)efficiency in the utilisation of the educational inputs provided in relation to educational outcomes. The association between educational inputs and the presence of private educational institutions has been scanned to assess whether the (in)adequacy in educational inputs provided by the government has any bearing on the expansion of private educational

institutions. The link between the educational outcomes in terms of the dropouts and the presence of private educational institutions has been evaluated. This is to examine whether the performance of public institutions providing quality education (dropouts as a proxy) has any association with the presence of private schools. This analysis ultimately enables us to identify the measures which need to be undertaken by the Government of Telangana to improve the functioning of government educational institutions so that the quantity and the quality of education can be improved and inequalities of the same across spaces and social groups can be reduced.

## 5.1 Functioning of Educational Institutions

Educational institutions, in order to function, require infrastructure facilities in the form of human resources and physical infrastructure. This section discusses the same related to the primary, upper primary and secondary school levels and all schools together (Tables A5.1 to A5.4),

### 5.1.1 Human Resources and Infrastructure

#### Human Resources

On an average, by 2011-12, considerable improvements had taken place in terms of the number of teachers appointed per school. The top order human development districts-Hyderabad and Ranga Reddy- have, on an average, around seven teachers per school, while the bottom and the middle order districts- have around five teachers. Surprisingly, the incidence of single teacher schools had increased sharply in 2011-12 as compared to 2004-05. This implies that the single teacher schools were not given priority in allocating additional teachers. The top order districts with a low

*The  
(in)adequacy  
and  
(in)efficiency in  
the utilisation of  
educational  
inputs reflected  
in educational  
status*

percentage of single teacher schools were in an advantageous position compared to the other districts. The two predominantly tribal districts among the middle order districts-Adilabad and Khammam, and Mahbubnagar from the bottom districts were in a disadvantageous situation. The appointment of teachers enables schools to have relatively fewer students per teacher. In other words, decreasing student-teacher ratio is a strategy for improving the academic performance of students. The Teacher-Pupil Ratio (TPR) declined in 2011-12 over 2004-05 across all the districts. However, the top order districts of Hyderabad and Ranga Reddy have a higher number of students per teacher compared to the middle level and the bottom level districts. Surprisingly, these districts have a higher number of teachers per school and also higher percentage of female teachers.

The number of teachers per school, on an average, is more in upper primary and secondary schools than at the primary level across all the districts. The number of teachers is higher in top-order districts (11 teachers) followed by bottom (10 teachers) and middle order districts (9 teachers). A lower percentage of single teacher schools and lower number of students per teacher in upper primary and secondary schools compared to primary schools are noticeable. But, Hyderabad and Ranga Reddy (top) and Karimnagar and Adilabad (middle) and Medak (bottom) districts are in disadvantageous position in this regard. The percentage of female teachers is comparatively lower in upper primary and secondary schools than in primary schools (Tables A5.1 to A5.4)

## Physical Infrastructure

Measures have been taken to strengthen school infrastructure at the primary level. The scenario with regard to drinking water facility was quite encouraging in Telangana. Hyderabad and Ranga Reddy (top order districts) and Karimnagar and Khammam (middle order districts) reported that drinking water was available in more than 90 percent of the schools in 2011-12. Medak and Mahbubnagar among the bottom districts were still in a disadvantageous position. Drinking water facility was available in more than 90 percent of schools at upper primary and secondary levels in all the districts during 2011-12. It is to be noted that drinking water was available in all upper primary and secondary schools in the state capital. However,

data were not available on the quality aspects of these amenities and their maintenance.

Ten percent of the primary schools did not have toilets for girls even in the state capital. 90 percent of the schools in Hyderabad had this facility. In Ranga Reddy, there were separate toilets for girls only in 56 percent of the schools. Among the bottom districts, Mahbubnagar has been in an unfavorable position. Adilabad, among the middle order districts, has also been in a poor condition. The situation of upper primary and secondary schools in this regard is the same as that of primary schools.

The state has been installing computers in the schools as a part of modernization of the education system. Hyderabad and Ranga Reddy had taken the lead. Adilabad and Khammam, the two predominantly tribal districts, lagged behind in this regard. Similarly the bottom districts-Nizamabad and Mahbubnagar have also trailed behind. Hyderabad, Ranga Reddy and Medak had taken the lead in modernisation at the upper primary and secondary levels too. However, Adilabad and Khammam reported a higher number of secondary schools that installed computers during 2011-12. Nizamabad and Mahbubnagar were lagging behind at the upper primary and secondary level schools also.

Ramp facility has been created in 15-20 percent of the schools to meet the basic need of the differently abled children. This reflects the sensitivity of the state / school managements towards social issues.

The population projections suggest that about 47.0 lakh children would be in the age group of 7-14 years by 2026 in Telangana State. The budgetary requirements for the establishment of schools, creation of infrastructure, especially toilets for girl students, teaching technologies etc. need to be worked out through a decentralized plan process involving communities and local bodies. The recent decentralization initiatives may facilitate this process in Telangana State.

## 5.1.2 Literacy and Educational Outcomes

### Literacy Outcomes

The literacy patterns have been analyzed across the districts of Telangana for 2001 and 2011 on the basis of Census Data. Literacy rates and inequalities have been analysed for each district across spaces-rural and urban; social groups-caste groups and

*There would be 47 lakh children in the age group of 7-14 years by 2026. The budgetary requirements for the establishment of schools and related infrastructure assume importance in this regard*



*Convergence exists across the districts and across the caste groups with regard to enrolment of students at secondary and higher secondary schooling*

gender groups; and age groups-younger groups of 15-24 years and adults. There has been an improvement in these dimensions of literacy across all the districts between 2001 and 2011. However, the relative positions of the districts on all these dimensions have remained more or less the same across the top, the middle and the bottom order districts. Hence, there has been no indication of convergence in regard to literacy parameters as evident from the increased value of the coefficient of variation (Table A5.5).

## Educational Outcomes of Children

### Quantity of Education

Enrolment, dropout, and never attended school are considered as the quantitative dimensions for analysis. The data relating to these dimensions are presented in tables A5.6 and A5.7.

Schooling of children is measured normally in terms of their attendance rates in the age group of 6-14 years. Telangana made impressive strides in improving the school attendance rate from 69.7 percent in 1993-94 to 95.6 percent by 2011-12. The expansion of primary schools and the Mid-Day Meal scheme were the major contributory factors. The growth rate of schooling during this period was notable among girls, socially disadvantaged sections and also in rural areas. As a result, the disparities have declined. The attendance rate among SC and ST students showed marked progress. All the districts of Telangana, including Mahbubnagar, made notable progress during this period and the school attendance rate was over 90 percent in 2011-12. The rate of improvement was higher in the districts with low initial rates and vice versa. This reflects the convergence of children's attendance rates across the districts.

The enrolment ratios had improved substantially at the Secondary and Higher Secondary level in the state by 41 percentage points during the 18 year period (1993-94 to 2011-12). The incremental gain was more for girl students indicating that gender disparities had declined. The SCs and STs had shown remarkable progress in enrolling their children (14-17 years age) at the secondary and higher secondary level classes. Thus, there was greater convergence across social groups. Among the middle order districts, Nizamabad and Nalgonda exhibited a better performance while Warangal fared poorly. Medak,

among the bottom districts, had performed inadequately.

The issue of *Never attended school* was really a challenging problem in the state during 1993-94. But, the incidence of children of 6-14 years who never attended school came down to 2.7 percent in 2011-12 from 28 percent in 1993-94. The efforts were more prominent with regard to the inclusion of tribal children. The districts which deserve more attention in resolving this problem are Mahbubnagar, Nalgonda, Khammam and Karimnagar.

The *dropout* ratio was a serious issue earlier in 1993-94 as per NSS data and the incidence was high in Telangana. In 1993-94, the dropout rate was 30 percent and it was very high in Mahbubnagar (55%). The gender difference in dropouts was a little more than 15 percent and girls were at a disadvantage.

By 2011-12, the state could reduce disparities across caste and location categories to about 1.7 percent at the aggregate level. While there was a decline in the dropout rates for all categories, it was more significant in urban areas and among ST students. The dropout rates were higher in Adilabad, Mahbubnagar and Warangal. However, DISE (2011) data reported that the dropout rate at the primary level was 16 percent and this rate was as high as 35 percent in case of ST students. Hence, the state has to put in more concerted efforts towards this group.

### Quality Education

Access to education should not be an issue in the light of the *Right to Education* Act, but the quality of teaching and learning outcomes still remain the major concerns in Telangana. The latter provides an explanation for the changes in the percentage of *never attended school* and *dropouts*. The quality aspects of education in the state have been highlighted by most of the evaluations (ASER, 2013; Azim Premji Foundation, 2010). The plausible reason could be that the focus of the programmes during implementation was largely input oriented even when policies did emphasize improvements in the quality of education.

The learning outcomes as observed by ASER, 2013 substantiate the view that the state has to make more concerted efforts to ensure better outcomes contributing to developing the capability of the

*Incidence of 'never attended children' in the age group of 6-14 years declined sharply across the districts*

*There was a decline in the dropout rates for all categories of the Social groups. Still the rates are higher*

human resources. A sizeable proportion of students was not able to read, recognize numbers and perform basic arithmetic operations in government schools, reflecting the low levels of efficiency and effectiveness of the education system. For instance, the ASER, 2013 observed that only two-thirds of the children studying in classes III to V in rural (combined) Andhra Pradesh were able to do subtraction or more and a similar proportion of the students could read level 1 text book or more. Studies have shown that the accountability of teachers and the adoption of student friendly teaching methods besides the participation of the local community and parental education are some of the crucial factors determining the learning outcomes.

One of the major reasons for the preference for private schools even among the poor was the discouraging learning outcomes of public primary schools. But for the Mid-Day Meal scheme, the participation of children, especially in rural areas, would have been lower. Schemes like the Sarva Siksha Abhiyan have helped in strengthening school infrastructure (toilets, classrooms, teachers, etc.) but their impact on the quality of teaching / learning outcomes needs to be evaluated, particularly in the backward and remote mandals. The Mid-Day Meals scheme has promoted the enrolment of children and also made an impact on the nutritional level of school children (Singh *et al.*, 2012). The impact of the efforts was found to be more at the primary stage and less at other levels. This view was substantiated by the declining attendance rates with an increase in the level of education. Teacher absenteeism and the poor quality of teaching have been quoted as the factors responsible for poor learning outcomes in the state (Chaudhury *et al.*, 2006).

It is heartening to note that about 80 percent of the public primary school level teachers were either graduates or post-graduates in the combined State of Andhra Pradesh (DISE, 2011-12). About (55) 45 percent of the (women) teachers had received in-service training during 2010-11 from the DIETs (District Institutes of Education and Training), IASEs (Institutes of Advanced Studies in Education) and CTEs (Colleges for Teacher Education). Despite having highly qualified and trained teachers, the learning outcomes in public primary schools were disquieting (ASER, 2013; Galab *et al.*, 2013).

Though the State had formed Village Education Committees as per the revised guidelines of SSA, these were not found to be effective in monitoring school performance, preparation of annual development plans etc. in many places. There have been recent initiatives by local bodies and the community in several villages of Telangana to make public schools more vibrant centres of learning. Such efforts need to be scaled up. Monitoring by the community and supplementing teacher strength are expected to bring qualitative improvements and create competitive conditions between public and private institutions. These facts need to be examined critically.

## 5.2 Relation between School Infrastructure and Educational Status

The relationship between the level of educational infrastructure and educational status has been estimated to examine the (in)adequacy of the educational infrastructure available in 2004-05 to contribute to the educational status in 2011-12 and also to assess the (in)efficiency in the utilization of available infrastructure to improve educational status in 2011-12. The relationship is found to be positive but insignificant and indicates that the educational infrastructure has contributed to the educational status positively to a limited extent. The infrastructure was inadequate in Warangal, Adilabad, Nalgonda, Nizamabad, Mahbubnagar, and Medak districts for adding to the educational status. The infrastructure was utilized inefficiently in Karimnagar district and hence failed to improve the educational status. Hyderabad and Ranga Reddy had adequate infrastructure to improve educational status. Khammam has used the available infrastructure efficiently to improve the educational status. Thus the bottom and the middle order districts either inefficiently utilised the available infrastructure or had inadequate infrastructure (Tables A5.8-A5.10).

The relationship between the growth in educational infrastructure and the growth in educational status during 2004-12 has been assessed to examine whether the expansion in the infrastructure has been made to modify the requirements across the districts to bring about an improvement in the educational status. The estimated relationship indicates that the expansion in infrastructure status during 2004-12 has not contributed to improvements in educational

*A sizeable proportion of students was not able to read, recognize numbers and perform basic arithmetic operations in government schools, reflecting the low levels of efficiency of the education system*

*Attendance of children would have been lower but for Mid-Day Meal scheme*



*The  
(in)adequate  
growth of  
infrastructure  
has determined  
the growth of  
educational  
status*

status across the districts in the state. Disaggregated analysis at the district level has indicated that the growth in infrastructure was adequate to result in improvements in the educational status in Ranga Reddy, Karimnagar, Khammam, Nizamabad and Medak districts. In the other five districts-Hyderabad, Warangal, Adilabad, Nalgonda and Mahbubnagar-the growth in infrastructure was inadequate to bring about improvements in educational status. As a matter of fact, Warangal, Adilabad, Nalgonda and Mahbubnagar districts need more growth in infrastructure. It is very clear that these districts have been denied their due growth in infrastructure to add to the educational status (Tables A5.8-A5.10)

### 5.3 Response of the Combined State to Improve Quality Education

The relationship between the dropout rates, as a proxy for the quality of education, in 2004-05 at the primary education level and the level of infrastructure of primary education in 2011-12 has been examined to assess the response of the state in addressing the issues relating to the quality of education at the primary level. This relationship is found to be negative but insignificant. Better infrastructure may have led to low dropout rates and vice versa. Disaggregated analysis at the district level has indicated that lower infrastructure in Warangal, Mahbubnagar and Medak districts may have led to higher dropout rates. On the contrary, higher infrastructure in Ranga Reddy, Karimnagar, and Khammam districts led to lower dropout rates. Of course, the state has responded well in the case of Hyderabad, Nalgonda and Nizamabad (Table A5.11 and A5.12).

### 5.4 Response of the Private Sector in the Combined State

The expansion of the private sector in schooling is sizeable in Telangana State. Private schools constitute 38 percent of the total schools including primary, upper primary and secondary schools. The percentage is found to be the highest among Secondary schools (49 percent), followed by Upper Primary schools (46 percent) and Primary schools (27 percent). The top order human development districts-Hyderabad and Ranga Reddy-have the highest percentage of private sector schools, while the bottom districts-Nizamabad, Mahbubnagar and

Medak-have the lowest. However, the middle order districts are in the middle position in this regard. But among the middle order districts, the tribal concentration districts-Adilabad and Khammam-have the lowest presence of private schools. Karimnagar stands apart from all the other middle order districts because of the considerable presence (above the state average) of private schools. It is evident that the performance of government schools is very crucial in the districts that largely depend on them.

The relationship between the dropout rates in 2005-06 in primary schools and the presence of private schools at the primary level in 2011-12 has been examined to assess the response of the private sector to the dropout rate, the proxy for quality education, across the districts in the state. The estimated relationship indicates that there is no relationship between the expansion of private schools and the quality education across the districts. As a matter of fact, there is a mild indication that the expansion of the private sector has taken place in the districts where the quality education had been higher. At the district level, the bottom human development districts-Nizamabad, Mahbubnagar and Medak-had experienced a low quality education at the primary level in 2005-06. But the presence of the private sector was very low in these districts by 2011-12. The percentage of private schools was higher in Ranga Reddy despite the higher quality education in the district. The same is the case with Karimnagar district. On the other hand, in Nalgonda and Warangal districts which had higher dropout rates, the presence of the private sector was lower (Tables A5.13 and A5.14)

In order to assess the response of the private sector to the deficits in the educational infrastructure of the state, the relationship between the level of government infrastructure and the level of private school infrastructure has been examined. The correlation between these two is found to be positive and significant across districts. This implies that more private infrastructure has flown to the districts with higher government infrastructure. At the district level, the response of the private sector was very high in Hyderabad, Ranga Reddy and Karimnagar in 2011-12. But these districts already had higher government infrastructure. Further, the presence of the private sector was lower in the districts where the government infrastructure was also very low.

This is true in the case of all other districts except Nizamabad (Table A5.15). It is possible that the demand for education influences both public and private investment. Demand for schooling could be determined by per capita income.

### 5.5 Community Response to Policies in Combined Andhra Pradesh and the Private Sector

The state has an obligation to provide quality elementary education to all children free of cost and the allocation of funds should be in tune with this target. It was found that state allocations to education in Combined Andhra Pradesh were well below the required level. Salaries and allowances accounted for over 96 percent, leaving a meager amount for development purposes. As a consequence, households had to spend a substantial amount for the education of their children. The 68th round unit record data of NSS were analyzed for the state of Telangana on the expenditure incurred by the households towards the education of the children at the primary level. On an average, households spent Rs 702.64 per annum towards children's (6-14 years) education in 2011-12. In percentage terms, the share of education in household consumption expenditure was 8.72. There were considerable inter-district variations in household expenditure. It was as high as Rs.1428 in Hyderabad and as low as Rs.367 in Medak. The quintile-wise data on the share of education in total household expenditure exhibited an increasing trend. The percentage of children enrolling in private schools increased with the level of household expenditure.

The on-going longitudinal panel study on childhood poverty in Telangana has brought out very interesting insights for understanding the response of the community against the backdrop of the policies and programmes of the undivided state relating to education and the expansion of the private sector in schooling (Tables A5.16 - A5.18). A comparison has been made in this respect for two groups of children - children when they were 12 years old in

2006 and children who were 12 years old in 2014. The percentage of children attending school has increased from 88 percent to 96 percent between 2006 and 2012 for the same age group of children. Thus there was an increase of 8 percentage points in enrolment. Households belonging to all the caste groups have responded by improving the enrolment of children more or less on the same footing. Hence, caste inequalities in sending children to schools had declined during this period. Gender inequalities, urban-rural inequalities and inequalities between the non-poor and the poor (the top tercile and the bottom tercile) have also declined. The aspirations of parents, especially of mothers, have increased in sending the children to schools. The declining inequalities in enrolment between the children of illiterate mothers and the children of mothers with 6 or more years of schooling stand as evidence to this.

The choice of parents has expanded in enrolling children because of the increasing availability of private schools along with public schools. They can choose between the public and private schools. The choice patterns of parents are very insightful and interesting. The inequalities in sending children to private schools between other castes and scheduled castes have declined, though marginally. The same is the case between the non-poor and the poor. But the inequalities have widened between urban and rural areas. Also, the gender inequalities have widened. It is reported by the mothers that they have sent girls to public schools and boys to private schools, given the resource constraint and the patriarchal value system. It is also reported that they prefer private schools to public schools with the expectations that the quality education is ensured in the former. This pattern clearly indicates that the mother's choice between public and the private schools is critical in selecting the school for enrolling the children.

The serious concern is that the quality of education has declined over time. The declining percentage of children doing the maths test correctly attests to this.

*Presence of the private sector was lower in the districts where the government infrastructure was also very low*

*There is no relationship between the expansion of private schools and the quality of education across the districts*

*Aspirations of parents, especially of mothers, have increased in sending the children to schools*

## Health Institutions and Health Status

### 6.0 Introduction

This chapter assesses the functioning of the institutions of health services in Telangana and their contribution to the health status and reducing inequalities in health status across the districts. The functioning of the institutions has been assessed in terms of health inputs provided and health outcomes realized. The inputs are measured in terms of human resources (doctors and other supporting staff), physical infrastructure, and the health services provided. The health outcomes are measured in terms of health status, reproductive health status and reproductive health outcomes-mortality and nutritional status.

Against this background, this chapter addresses itself to these issues: Whether (in)adequate and (in)efficient utilization of health infrastructure has contributed to (in)equalities in health status and (in)equalities in reproductive health status across

the districts? Whether (in)adequate and (in)efficient utilization of reproductive health services has contributed to (in)equalities in mortality (Infant and Maternal) and child nutrition across the districts? And what are the concerns that need to be addressed by the Government of Telangana?

### 6.1 Health Infrastructure and Health Status

Health status is influenced by the availability of and access to health services. The state and individual households are the important stakeholders in the health service system. The public health infrastructure should be adequate enough to protect and promote health.

#### 6.1.1 State Health Infrastructure

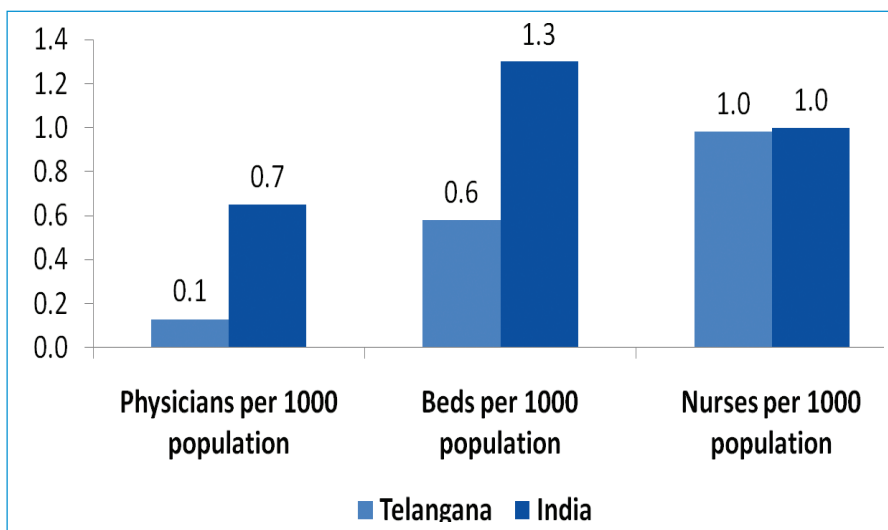
There are 108 general hospitals and 17 hospitals for special treatment (125 hospitals in total) at present in the state. There were 671 Primary Health Centers (PHCs) and 70 dispensaries as on March

2015. One physician, on an average, is available per 8000 population in Telangana against 1600 at the all-India level (Fig. 6.1). The rural population served by a Sub-Centre (SC), Primary Health Centre (PHC) and Community Health Centre (CHC), on an average, are 5290, 48795 and 96110 respectively in Telangana State (Statistical Abstract, Government of Telangana, 2016). There are deficits in human resources, physical infrastructure, and health services across CHCs, PHCs and SCs in Telangana (for details see DLHS 4, 2012-13).

It is evident that the dependence on private hospitals is higher both in rural as well as urban areas in Telangana as compared to the national level (Table A6.1).

*Dependence on private hospitals is higher both in rural as well as urban areas in Telangana as compared to their respective national averages*

Fig. 6.1: Health Infrastructure per 1000 Population (2014-15) - Telangana and India



Source: Statistical Abstract, Government of Telangana 2016

The Primary Health Centres (PHCs) are underutilized mainly due to the non-availability of doctors and time schedules unsuitable for the public. On the other hand, both secondary and tertiary level hospitals are over-utilized. According to NSSO 71st round (2014), the utilization of Health Centres/PHCs for out-patient care remained at only 5.2% in Telangana.

It may be observed that the share of the public sector in hospitalization and deliveries was in proportion to its bed strength. Facility surveys conducted by the National Commission on Macroeconomics and Health (NCMH) and studies conducted by CESS (2003, 2009) indicated that the average turnover of in-patients per facility and the number of patients per doctor was 4 times higher in public hospitals. The bed occupancy was 62% in the public hospitals against 42% in private hospitals. Clearly, it was the lack of facilities in the public sector which had forced people to prefer private institutions (Narayana, 2009).

The health infrastructure index has been computed by taking the information on input indicators such as: physical infrastructure (average population covered by Sub-Centres, PHCs, CHCs, percentage of Sub-Centres and PHCs having regular power supply and beds per lakh population); health services (percentage of PHCs/CHCs having new-born care services); and human resources (percentage of Sub-Centres/PHCs having ANM, MHW, Medical Officer, Lady Medical Officer) (Table A6.2 and Chapter 6 Appendix). The results show that the status of public health infrastructure is not directly related to the status of human development of the districts. This means that factors other than health infrastructure influenced human development.

### 6.1.2 Household Health Facilities

Access to safe drinking water and sanitation is important for health and the overall quality of life. According to the 2011 Census, only 72.4% of the total households in the state had access to tap water which is considered to be a relatively safe source of drinking water. The NFHS-4 (2015-16) survey indicated some improvement that 78% of the households have access to an improved source of drinking water in the state.

Access to sanitation facilities, which is an important intermediate environmental health indicator, is

distressingly low in Telangana. Data for 2011 (Census) as well as 2015-16 (NFHS-4) show that nearly half of the households in the state did not have latrines (Table A6.3). More households in urban areas (64%) have latrines as compared to rural areas (39%).

According to a recent survey (DLHS-4, 2012-13) 49% of households in Telangana lived in pucca houses. A higher proportion in urban areas had better conditions of housing (improved sanitation facility-84%; clean fuel use-85%; safe drinking water-98.2%). According to the study of CGG-COI, 2016, about 44% of households live in pucca houses, 81% have access to an improved source of drinking water and 36.4% have no toilet facility in Telangana state.

The household health facilities index has been estimated for all the districts of Telangana by taking the information on the structure of the house, availability of drinking water and sanitation facilities and the type of fuel used for cooking purposes. The household health facilities index is linked to the level of human development of districts.

There are wide variations in the household health facilities across the districts within the state. The top human development districts-Hyderabad and Ranga Reddy-are better placed. Interestingly, the bottom two districts - Medak and Mahbubnagar-are better off than the middle order districts-Warangal and Adilabad. Among these, Nalgonda, the fluoride affected district, is in a very poor position.

The top human development districts are better placed in regard to housing facility, separate kitchen for cooking and clean fuel for cooking (Table A6.3). The practice of open defecation is high in Adilabad (63.6%) followed by Warangal (52.6%) and Mahbubnagar (41.5%) (DLHS 4, 2012-13). The state health infrastructure index and household health facilities index and their aggregate index along with health status are presented in table A6.4.

### 6.1.3 Relation between Health Infrastructure and Health Status

The rank correlation between the health infrastructure index (2012-13) and health index (2011-12) is found to be positive but not statistically significant (Table A6.5). Both public and household health infrastructure are adequate and efficiently utilised in the top human development districts

*Inefficient utilisation of infrastructure in some districts and inadequate infrastructure in some other districts have constrained the health status*

*There are wide variations in the household health facilities across the districts*



*There is an urgent need to increase ANC coverage in the first trimester and 4 ANC visits to cent percent*

*A higher proportion of women with higher education and living in urban areas reported full ANC as compared to women who were not literate and lived in rural areas*

in relation to their health status. The bottom human development districts (Nizamabad, Mahbubnagar and Medak) are handicapped due to lack of adequate infrastructure of both types. The inefficient utilisation of infrastructure in Karimnagar and inadequate infrastructure in Adilabad and Nalgonda have constrained the health status in these middle order districts. However, the infrastructure was adequate and utilised efficiently in Khammam among the middle order districts. Infrastructure disaggregated in terms of household and public facilities shows that the inadequacy of household facilities has depressed the health status in Adilabad and Nalgonda (middle order districts) and in Nizamabad and Mahbubnagar (the bottom districts). Further, the inadequacy of public infrastructure in Adilabad, Nalgonda, Nizamabad Mahbubnagar and Medak districts and the inefficient utilisation of the same in Karimnagar district have lowered the health status of these districts (Table A6.6).

## 6.2. Reproductive Health Services

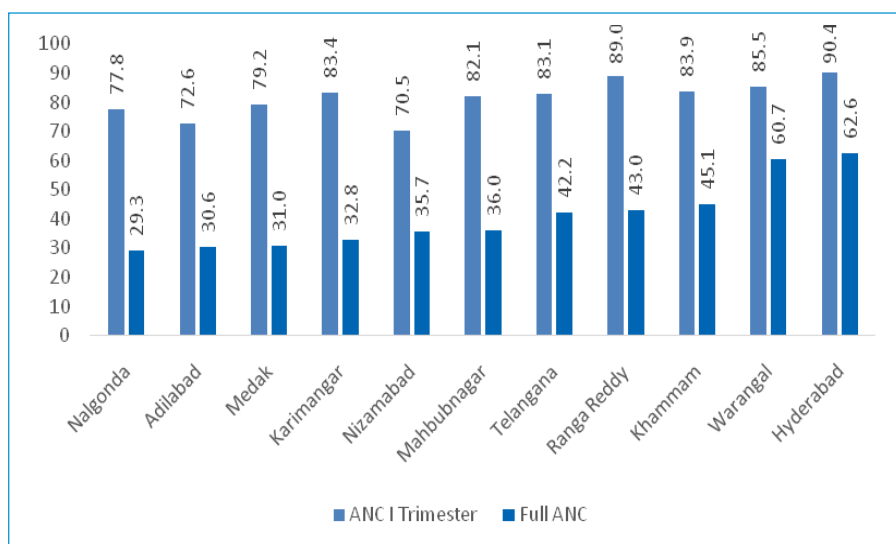
Maternal care services include ante-natal care, natal care and post-natal care. Ante-natal care (ANC) refers to pregnancy-related health care provided by a doctor or a health worker in a medical facility or at home. ANC includes monitoring of pregnancy for any signs of complications, detecting and treating pre-existing and concurrent complications and providing advice and counseling on preventive care. As part of the ANC, women receive two doses of tetanus toxoid vaccine, adequate amounts of iron

and folic acid tablets or syrup for preventing/ treating anemia. ANC services provided by medical and paramedical professionals comprise regular physical checks with weight, height, and blood pressure measurement, hemoglobin level test, consumption of IFA, Tetanus (TT) injection and judging the growth status and position of the foetus. Child care practices include breastfeeding and immunization among others. These services have an impact on the mortality of mothers and children and child nutrition.

### 6.2.1 Ante-natal Care

In the state about 83% pregnant women received ante-natal care in the first trimester and 75% pregnant women reported at least four ante-natal care visits during pregnancy (NFHS-4, 2015-16). Contrary to the previous survey results of DLHS-4 (2012-13), a higher proportion of pregnant women availed of ANC visit in their first trimester but failed to have four ANC visits during pregnancy. This highlights the urgent need to increase ANC coverage in the first trimester and 4 ANC visits to cent percent. In Nizamabad (70.5%), and Adilabad (72.6%) with a higher population of tribals, a lower percentage of women than the state average availed of ANC visit in their first trimester during 2015-16 (Fig.6.2). The complete ANC package (3+ ANC visits, 1+ TT injection and 100 IFA tablets) for pregnant women increased marginally from 39% in 2007-08 to 40% in 2012-13 and reached 42% (2015-16) in Telangana State. In all the three bottom HDI districts and Karimnagar, Adilabad and Nalgonda from the middle HDI districts, a lower percentage of women received full ANC coverage as compared to the state average. Nalgonda (29.3%), Adilabad (30.6%) and Medak (31.0%) require urgent attention in this regard (Fig.6.2). A higher proportion of women with higher education and living in urban areas reported full ANC as compared to women who were not literate and lived in rural areas (DLHS-4, 2012-13).

Fig. 6.2: Women Received ANC in I Trimester and Full ANC -2015-16 (%)



Source: District Fact Sheets, NFHS-4,2015-16

and encouraged the mothers to deliver in a health facility is safer for the mother and new-born; and helps to reduce

### 6.2.2 Institutional Deliveries

Encouraging the mothers to deliver in a health facility is safer for the mother and new-born; and helps to reduce



### BOX 6.1

#### *A Comparison of RMNCH+A (Reproductive, Maternal, Newborn, Child and Adolescent Health) across the four Southern States.*

The percentage of women age of 20-24 years married below 18 years in Telangana (27.6%) is higher than in Tamil Nadu (18.3%) and Karnataka (23.2%) but lower than in Andhra Pradesh (32.7%). Telangana had higher teenage child births (10.6%) than Tamil Nadu (6.3%) and Karnataka (8%). Nine in ten registered pregnant women (89% in Telangana and 96% in Tamil Nadu) reported availability of Mother and Child Protection (MCP) card. Universal ante-natal care (ANC) is reported in all states, but the first trimester ANC check-up remained at 83% in Telangana. Marginal variations were reported across districts in the consumption of 100 or more Iron Folic Acid (IFA) tablets/syrup by pregnant women (45-56%) in Telangana, Andhra Pradesh and Karnataka states.

Institutional deliveries are almost universal in Telangana, Tamil Nadu and Kerala. However, 62% women availed of private institutional services in Telangana which was much higher than the other southern states and only 31% of pregnant women preferred government institutions. The utilization of public health institutions was reported to be 61% in Karnataka and 67% in Tamil Nadu. In Telangana the percentage of Caesarean sections was very high in both public and private institutions (58%) as compared to 40% in Andhra Pradesh, 34% in Tamil Nadu and 24% in Karnataka. Women who had deliveries at home were lower in Telangana (8.5%) against 12% in Tamil Nadu and 35% in Karnataka states. Eighty percent of women in Telangana and Andhra Pradesh states received post-natal care within 2 days after delivery. About one-third (37%) mothers initiated breast-feeding within an hour after delivery in Telangana as compared to Andhra Pradesh (40%), Tamil Nadu (55%) and Karnataka (56%).

Source: National Family Health Survey (NFHS 2015-16) State Factsheets downloaded from NHRM website of MoHFW, GoI.

*Private hospitals in Telangana top the country in performing Caesarean section*

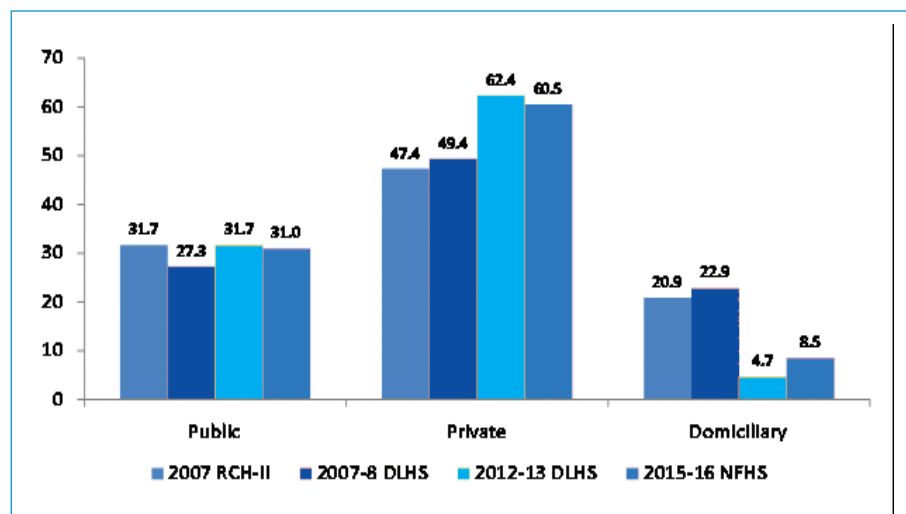
*There are still around 20 percent of women who need to be stayed in the health facility for 48 hours after delivery*

pregnancy related complications. Institutional deliveries increased from 65.8% in 2002-04 (DLHS-2) to 76.9% in 2007-08 (DLHS-3) and further reached 94.1% in 2012-13 (DLHS-4). Data from NFHS-4 (2015-16) indicate 91% were institutional deliveries (Box 6.1). Of these, 60.5% women preferred to have deliveries in a private hospital / nursing home while 31% women delivered in a public institution such as government hospital or PHC. About 8.5% of women delivered at home (Fig.6.3 to Fig.6.5). Deliveries conducted in public institutions remained around 31% in the 10 years reference period between 2007 and 2016. During 2015-16, Adilabad (70.8%) and Mahbubnagar (78.4%) had relatively lower percentage of institutional deliveries. This may be the reason for the high maternal mortality rates in these districts.

In all, Caesarian sections were carried out in 58% of deliveries and remaining 42% of deliveries were normal. Private hospitals in Telangana top the country in performing Caesarean section or surgical deliveries against the 10-15%

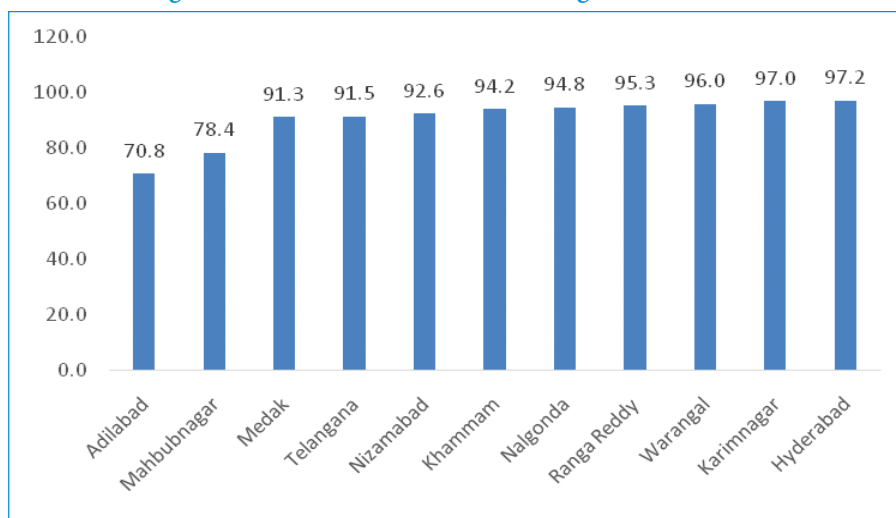
benchmark of the World Health Organization (WHO) (Box 6.2). The lowest percentage of Caesarean sections was reported in all the three bottom HDI districts and Adilabad during 2015-16. The percentage of Caesarean sections is higher in the middle level and top level HDI districts. The percentage of deliveries in private institutions is also higher in these districts. The percentage of Caesarean sections conducted in private and public

Fig. 6.3: Trends in Delivery Care in Telangana (Women who had live / still birth during 3 reference years) (%)



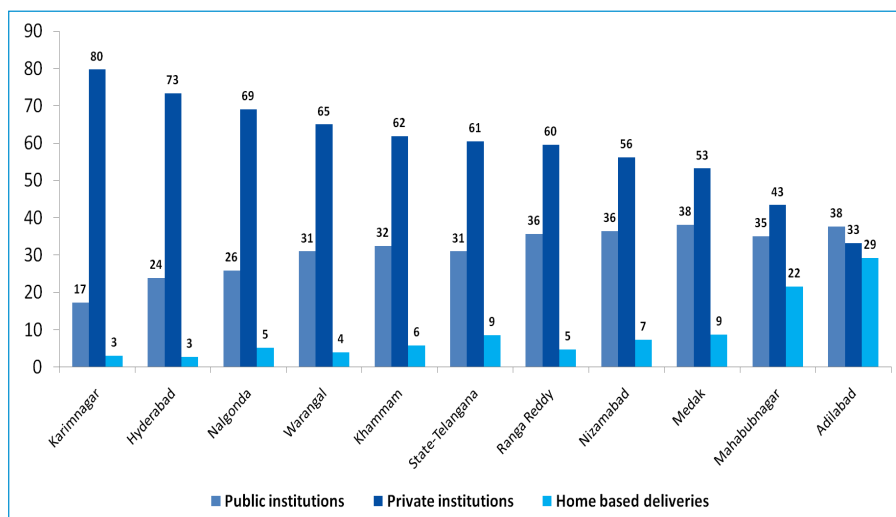
Source: RCH-II 2007, DLHS 3 & 4-2007 and 2012, NFHS, 2015-16

Fig. 6.4: Institutional Deliveries in Telangana-2015-16 (%)



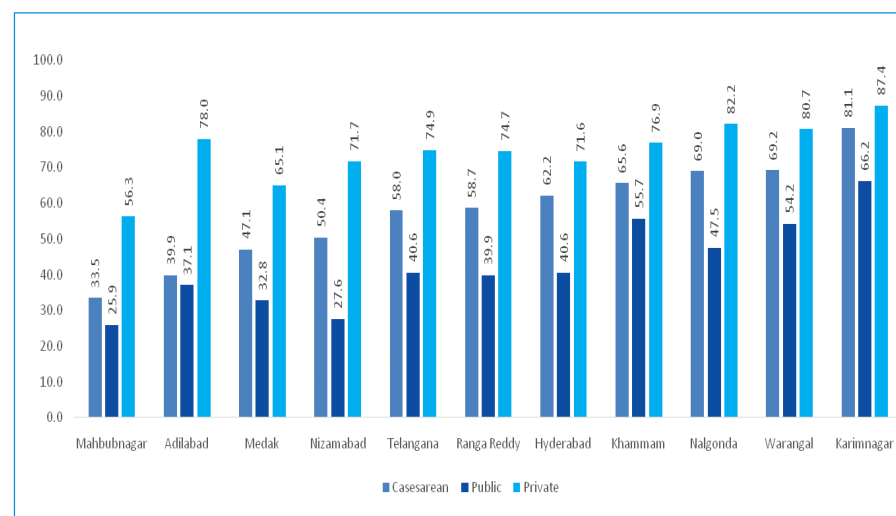
Source: District Fact Sheets, NFHS-4,2015-16

Fig. 6.5: Institutional and Home Deliveries in Telangana 2015-16 (%)



Source: District Fact Sheets, NFHS-4,2015-16

Fig. 6.6: Caesarean Sections in Telangana-2015-16 (%)



Source: District Fact Sheets, NFHS-4,2015-16

institutions is highest in all the middle level HDI districts (Fig.6.6).

### 6.2.3 Post-natal Care

A large proportion of maternal and neonatal deaths generally occur immediately after delivery. Safe motherhood programmes have increasingly emphasized the importance of post-natal care, recommending that all women need to receive a check-up within two days of delivery. The majority of the women (74%) in Telangana who gave birth in a public health facility stayed in for 48 hours or more; this was lower than Kerala (96%) and Karnataka (92%). The NRHM guidelines suggest a minimum 48 hours stay in the health facility after childbirth. At the state level 83% of women stayed in the health facility for 48 hours after delivery which varied from 76.5% in Adilabad to 88% in Khammam district (DLHS 4, 2012-13).

A positive finding is that the post-natal check-up of women within 2 days after delivery increased to 81.8% in 2015-16 as compared to 77% in 2012-13 (Fig. 6.7). Efforts should be made to lay equal emphasis both on the mother and child during this period. The health staff should highlight the importance of the *five Bs* (Baby, Breast, Bowel, Bladder and Bleeding) during home-based newborn care visit. The lowest percentage of women receiving a post-natal check-up is reported in Adilabad. Among the bottom HDI districts, the percentage in Mahbubnagar was 70.6 percent which is lower than the state average. Hyderabad (79%) and Ranga Reddy (81%), the top HDI districts, also had a lower percentage than the average.

### 6.2.4 Breastfeeding Practices

Breastfeeding is one of the most important determinants of child survival, birth spacing and prevention

## BOX 6.2

### Rising Rates of Caesarean Section: A Cause for Concern

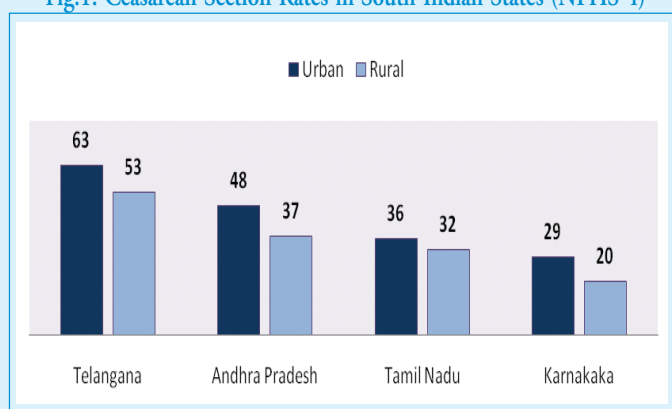
Over the past few years, the rates of Caesarean section (C-section), as a proportion of all deliveries, have been rising sharply both in India and across the globe. Such high rates, that are multiple times the 'optimal' level indicated by the World Health Organisation (WHO), are proving to be a cause of concern for policy makers, programmers, providers and the community at large.

The latest NFHS-4 (2015-16) C-Section Rates (CSR) data released for 17 states in early 2016, reveals that many states have rates several times higher than the population levels recommended by WHO. Of the 17 states, 11 have CSRs of over 20%, with Telangana having the highest total CSR, at 58%. If we look into the public and private sector institutional deliveries, in Telangana 75 % of the C-Sections are happening in private institutions and 41 % in public institutions.

As per NFHS-4 data the CSR is higher in urban areas than in the rural parts of the Southern States of India (Fig 1). However, the difference is not very stark, and in fact, in the states with high overall CSR, even the rates in the rural areas far surpass the standards set by WHO.

As per NFHS 4, C-Section deliveries are more in Karimnagar district compared to other districts in Telangana State. Mahabubnagar district has the lowest C-Section deliveries.

Fig.1: Caesarean Section Rates in South Indian States (NFHS 4)



Being a surgical intervention, C-section is an expensive procedure compared to a normal delivery, not just in terms of the price paid by the woman/client, but also in terms of the cost to the provider and the health system overall.

To conclude, high CSR is not only of concern because of the additional load that it puts on an already burdened health system, but also because there is sufficient evidence to say that unnecessary/un-indicated C-sections may actually be harmful for the mother and child.

Source: CESS (2016) "Deciphering the Determinants and Impacts of Raising Rates of Caesarean Section and Offering Potential Solutions", Division for Child Studies, Centre for Economic and Social Studies and UNICEF, Hyderabad.

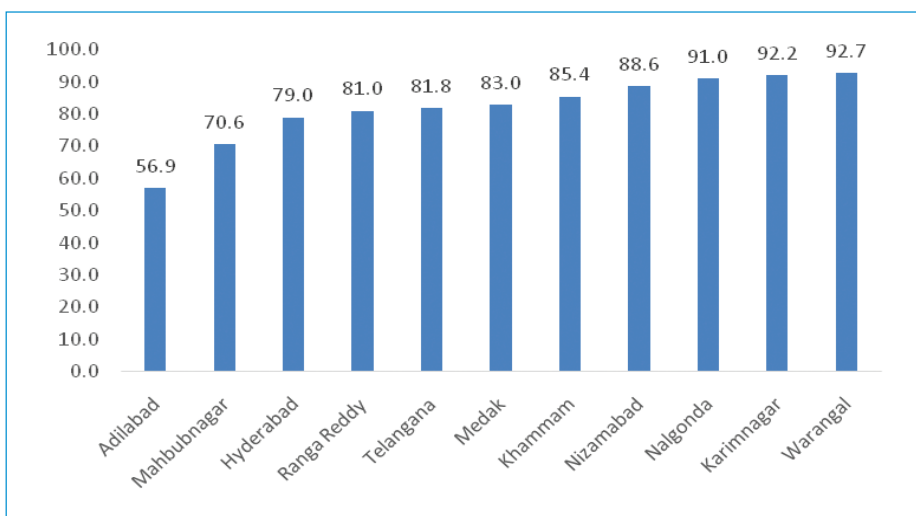
of childhood infections. Eighty-eight percent of children under 3 had been given colostrum, and there was not much variation across selected background characteristics. Data from DLHS-3 (2007-08) showed that the proportion of children breastfed by mothers within one hour of birth has increased from 37.8% in 2007-08 (DLHS III) to 54% by 2012-13 (DLHS IV) in all the districts of Telangana (Fig.6.8). The duration of exclusive breastfeeding declines as the children grow older. About 7% of children of 6-9 months are given other fluids along with semi-solid (12%) and solid (6%) food. Women with a low education and low standard of living and those from SC and ST were more likely to have breastfed their children within an hour of birth, highlighting the positive trend of the early breastfeeding practice among SC and

ST groups (Murthy and Sekhar, 2012). However, across the districts, a lower percentage of children were breastfed in districts with high SC and ST population such as Khammam, Warangal, Nalgonda, Karimnagar and Medak (Fig.6.8).

### 6.2.5 Immunisation of Children

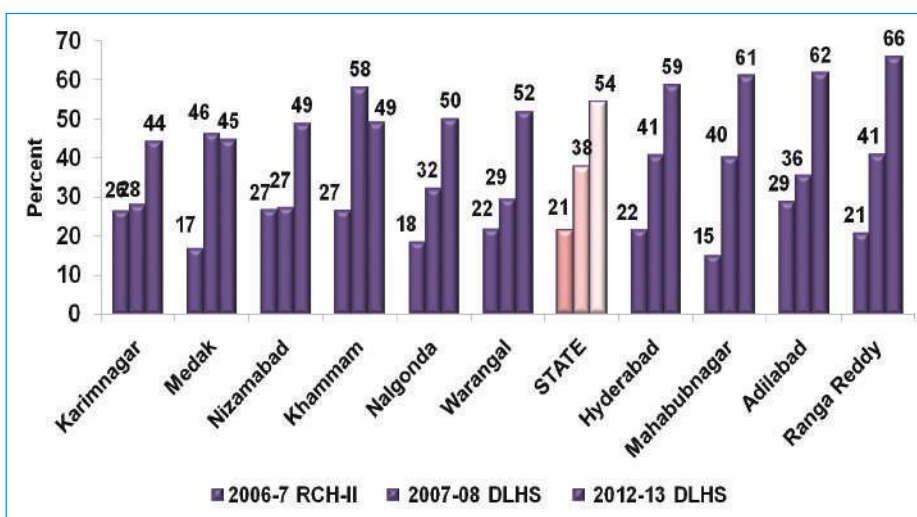
The vaccination of children against six serious but preventable diseases (tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis and measles) has received the maximum attention in child health care programmes in India. The percentage of children who were fully immunized against prescribed vaccines decreased from 72.2% in 2007-08 to 47.5% in 2012-13 and reached 68.1% by 2015-16. The relatively low percentages of DPT3 and OPV3 were responsible for the low percentage of fully immunized

Fig. 6.7: Women Received Post-natal Care within 2 days of Delivery-2015-16 (%)



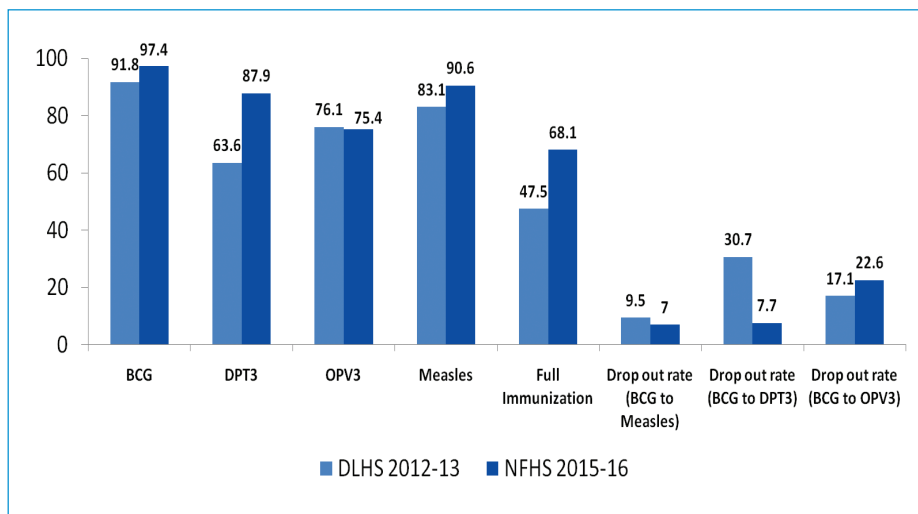
Source: District Fact Sheets, NFHS-4,2015-16

Fig. 6.8: Children Breastfed within one hour of Birth (%)



Source: District Fact Sheets, NFHS-4,2015-16

Fig. 6.9: Immunization Coverage (Children aged 12-23 Months who received recommended Vaccines) (%)



Source: DLHS 4-2012-13 and NFHS 4-2015-16

children (Fig.6.9). However, Khammam (middle level HDI district) and Nizamabad and Mahbubnagar (bottom level HDI districts) are lagging behind. Ranga Reddy (top level HDI district) and Adilabad (middle level HDI district) are just close to the state average in immunization of children (Fig. 6.10).

### 6.2.6 Relation between Health Infrastructure and Reproductive Health Status

The reproductive health index has been computed based on the indicators related to ante-natal care, nature of deliveries conducted, post-natal care, child feeding practices and immunization. The results show that the reproductive health status is the highest in Hyderabad district-the top level HDI district-while Karimnagar, Khammam and Adilabad (middle level HDI districts) and Mahbubnagar (bottom level HDI district) had a higher status than the average (Table A6.7 and Table A6.8).

The relationship between health infrastructure (2012-13) and reproductive health status (2012-13) is found to be positive but not statistically significant (Table A6.9). Both the state and household health infrastructure is found to be adequate and efficiently utilized in all the middle level HDI districts (except Warangal and Nalgonda) and Mahbubnagar among bottom level districts, in relation to reproductive health status. The health infrastructure is inadequate in Nizamabad and Medak. Ranga Reddy, has not utilized infrastructure efficiently to achieve a better reproductive health status.



Infrastructure disaggregated in terms of state and household facilities shows that the state health infrastructure affected reproductive health in Ranga Reddy, Nizamabad and Medak districts. There is a need to strengthen both state health infrastructure and household health facilities in Nizamabad and Medak districts (Table A6.10).

### 6.3 Reproductive Health, Mortality and Nutrition

We now turn to an analysis of the relationship between reproductive health status and mortality-child mortality and maternal mortality.

#### 6.3.1 Mortality

##### Child Mortality

Infant and child mortality rates are important indicators that measure socio-economic conditions and the quality of life. Infant Mortality Rate (IMR) estimates for Telangana from the Reproductive and Child Health-Baseline Survey (IHFWS, 2007) indicated an IMR of 49 per 1000 live births in 2006. Considering this estimate as a base, IMR declined by 15 points (from 49 to 34 per 1000 births) in a 9-year period, indicating a decline of 1.7 points per annum (SRS, 2015).

Rural-urban differentials in IMR are considerable and IMR was almost 10 percentage points lower in urban areas than in rural areas (Rural- 37 and Urban -27). However, the gender disparity was only two percentage points higher for rural women than in the urban women in Telangana (SRS, 2015). Further, children born to mothers under age of 20 years; who had children less than 2 years apart; who had no education; and who belonged to SC and ST were at greater risk of dying than children not belonging to these groups. IMR estimates were also worked out for slum (27.9) and non-slum (36.4) localities of Hyderabad Municipal Corporation. Neo-natal mortality as a percentage of IMR was 71% in non-slum areas as compared to 86% in the slums (NFHS-3, 2005-06). A cause of concern for the new state is how to achieve a further decline in the nearly stagnant neo-natal mortality rate.

Fifty-one percent of the infant deaths were reported between 24 hours and one week immediately after childbirth and 15% of deaths were due to low birth weight (LBW) of the newborn (HMIS 2013-14).

The infant must be bathed after 24 hours after delivery to avoid a sudden drop in body temperature. Kangaroo mother care (keeping the naked baby firmly on the mother's bare chest in a breastfeeding position to prevent hypothermia) is a recommended practice. Hence the complete ANC package and universal post-natal care of the mother and newborn are priority areas to prevent neo-natal deaths.

IMR can be segregated into neo-natal and post-neo-natal mortality. It is estimated that two-thirds of infant deaths occur in the former phase. According to the latest SRS (2015), the proportion of *Early Neo-natal Mortality* (deaths occurring within seven days after birth) to infant mortality in Telangana was 51.4% (59% in rural; 36% in urban). Further reduction of IMR requires better medical care at the neo-natal stage which should be extended during pregnancy and delivery.

In order to improve neo-natal care in secondary and tertiary hospitals, the National Health Mission (formally National Rural Health Mission) established 18 Special Newborn Care Units (SNCU) and 61 Newborn Stabilization Units (NSU) in collaboration with the UNICEF, Hyderabad.

According to the Sample Registration System (SRS) data, IMR in Telangana state declined to 34 in 2015 as compared to 35 in 2014 (Table A6.11). However, the latest NFHS survey 2015-16 reported that the IMR in the state is 28.

##### Maternal Mortality

The Maternal Mortality Ratio (MMR) is a sensitive indicator reflecting the availability of health care facilities and the prevailing socio-economic scenario. Maternal mortality captures not only the reproductive health status of women but also provides an understanding about the adequacy of maternal services provided to them. The MMR is defined as the number of maternal deaths during pregnancy or within 42 days after the termination of pregnancy per one lakh live births during a year.

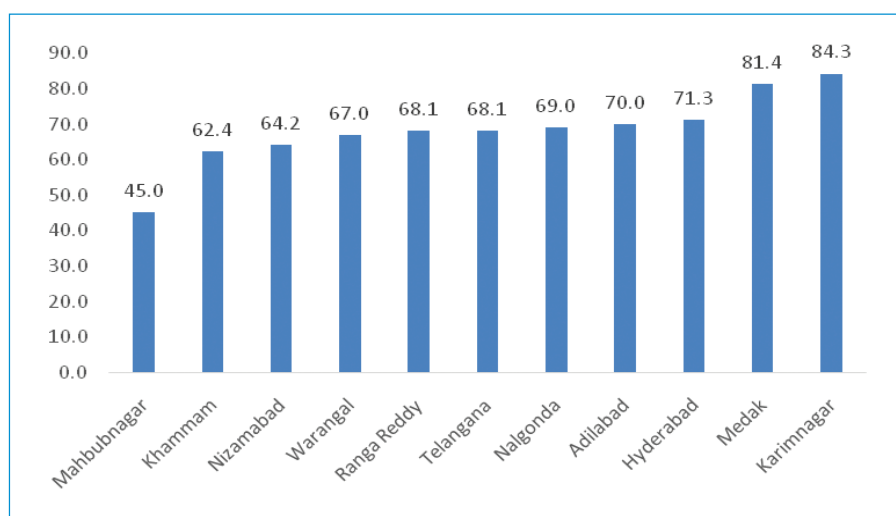
The MMR declined by 34 points from 212 in 2007-09 to 178 in 2010-12 and to 167 in 2011-13 at the national level. Combined Andhra Pradesh had managed to reduce it by 24 points from 134 in 2007-09 to 110 in 2010-12 and further to 92 in 2011-13. Telangana/combined Andhra Pradesh becomes the fourth best state in the country with

*NFHS survey 2015-16 reported that the IMR in the state is 28.*

*Inter-district variations in MMR need to be addressed*



Fig. 6.10 Percentage of Children (12-23 Months) Fully Immunised-2015-16



*Complete ANC package and universal post-natal care of the mother and newborn are priority areas to prevent neonatal deaths*

Note: Fully Immunised: BCG, Measles, 3 doses of polio, 3 doses of DPT

Source: District Fact Sheets, NFHS-4,2015-16

*A better reproductive health status has enhanced the nutritional status of children across the districts*

the lowest MMR after Kerala (61), Tamil Nadu (79) and Maharashtra (68). There are wide inter-state variations in MMR ranging from 300 in Assam to 61 in Kerala (RGI, 2011-13). About 44% of reported maternal deaths occurred in the first pregnancy (primi-gravid) and the rest after two or more pregnancies. Thus, it is necessary to delay the first pregnancy after marriage and to popularize spacing methods between two births. The continuum of care and complete post-partum care to every mother and newborn and the identification of high risk pregnant women in primi-gravid must be re-emphasised for reducing maternal deaths. A comparison of MMR has shown that Khammam, Adilabad, Mahbubnagar and Medak had higher MMR than the state as a whole (Table A6.12).

### Relation between Reproductive Health Index and Mortality

The rank correlation between the reproductive health index (2012-13) and mortality rates (IMR 2013 and MMR 2011-13) is found to be negative and statistically not significant (Table A6.13). Hyderabad and Ranga Reddy-the top level HDI districts and Karimnagar and Warangal-the middle level HDI districts utilized the reproductive health services adequately and efficiently in combating IMR. IMR could not be reduced in Nalgonda (middle level HDI district) and in Nizamabad and Medak (the bottom level districts) because of inadequate

reproductive services. Nalgonda. Khammam and Adilabad and Mahbubnagar, a bottom level HDI district, could not take advantage of the adequate reproductive health services to reduce IMR (Table A6.14).

Reproductive health services influence the incidence of MMR. It is evident that there was adequate and efficient utilization of reproductive health services in districts at all development levels which reduced the MMR. However, Adilabad, Khammam and Mahbubnagar could not take the advantage of the reproductive health services to reduce MMR (Table A6.14). Institutional and cultural factors seem to be influencing the mortality rates across these districts.

### 6.3.2 Nutritional Status

Nutritional status is a major determinant of the health and well-being of children. The percentage of children stunted under 5 years of age (low height for age) was 28 in Telangana (NFHS 2015-16).

Further, a higher percentage of children were stunted and underweight in Khammam, Adilabad, Nizamabad, Mahbubnagar and Medak districts (Fig. 6.11).

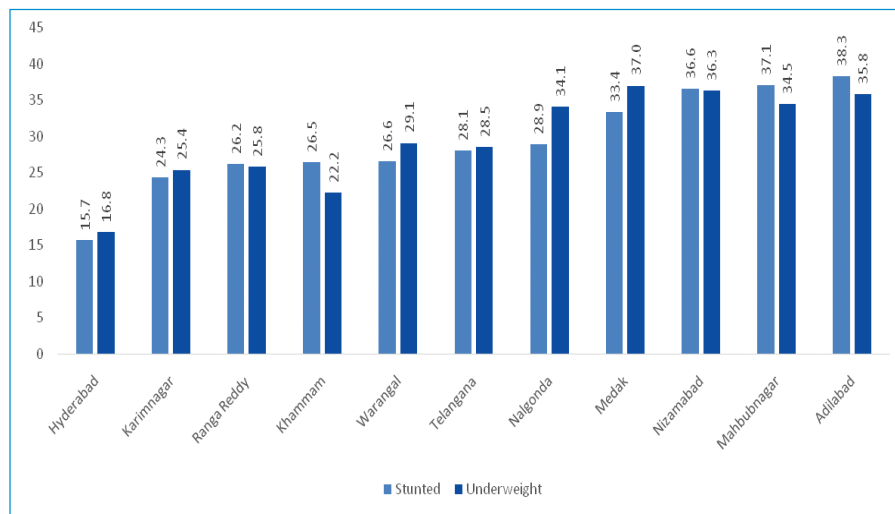
### Relation between Reproductive Health Index and Child Nutrition

The relationship between reproductive health status (2012-13) and nutritional status of children (2012-

*Fifty-one percent of the infant deaths were reported between 24 hours and one week immediately after childbirth*

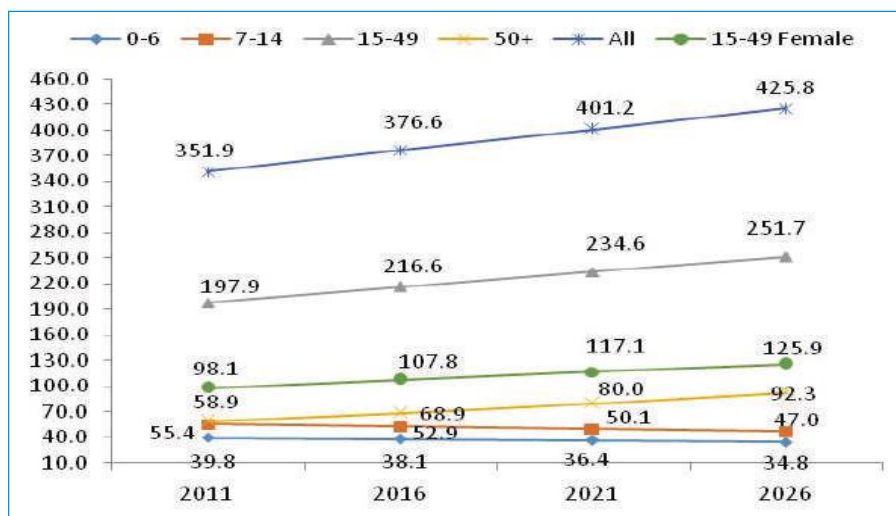
Fig. 6.11 Percentage of Children (under Five Years) Stunted and Underweight-2015-16

*A higher percentage of children were stunted and underweight in the tribal concentrated districts and in the bottom level human development districts*



Source: District Fact Sheets, NFHS-4,2015-16

Fig. 6.12: Population Projections by broad Age Groups-2011-2026 (in Lakhs)



Note: We have aggregated the data for 10 districts of Telangana from Census 2001 and 2011 for arriving at the Telangana State total. We assumed a simple linear growth rate of the decade 2001-11 while estimating the population for future years. The population projections for broad age groups for the period 2012 to 2026 are arrived at by projecting the shares of each age group in total population. The share of population in each age group is projected by taking the rate of growth of the share of each age group between 2001 and 2011. We did this exercise separately for rural male, rural female, urban male and urban female. Finally, these shares are applied to the total population to obtain the absolute population for each age group for the years from 2012 to 2026.

13) was examined (Table A6.15). There is a negative correlation between the reproductive health index and nutritional status, though statistically not significant (Table A6.16). Hyderabad, the top level HDI district, reported high stunting despite being better placed in reproductive health status (Table A6.16a). The low reproductive health status depressed the nutritional status of children in Ranga Reddy and Nizamabad. All the middle order HDI districts and Medak, the bottom district have benefited by their better reproductive health status. Thus, it is evident, a better reproductive health status enhances the nutritional status of children.

### Concerns need to be addressed

In view of the above analysis, the health system has to gear up to the future challenges. The population of Telangana is projected to increase from 352 lakh in 2011 to 426 lakh by 2026 (Fig.6.12). The population of women in the reproductive age (15-49 years) is expected to increase from 98 lakh in 2011 to 126 lakh in 2026, growing at the rate of 1.7 percent per annum. This future situation would create a severe pressure on addressing maternal, newborn and child health services in the coming years.

*Growth of women population in the reproductive age would create a severe pressure on addressing maternal, newborn and child health services in the coming years*

## BOX 6.3

### Anganwadi Centres (AWCs) and Child Wellbeing

*The recently concluded study on functioning of AWCs and Child Wellbeing brought out the following policy suggestions*

- 1: *Growth promotion, the provision of supplementary food and other key ICDS services are in some cases performed in adverse environments. This will impact the service delivery at expected levels. Inadequate space for cooking and running AWC activities, lack of functional toilets and drinking water provision, lack of electric connection and location of AWCs are the factors impacting the service delivery. Providing a safe and hygienic environment for ICDS service delivery is more important.*
- 2: *Iron-deficiency is the most widespread nutritional deficiency and the most common cause of anemia during pregnancy. Roughly half of the pregnant women are not consuming IFA supplementation. The worst scenario is observed in AWCs serving tribal communities. Supply of IFA tablets are not matching the demand, which makes a larger impact on service delivery.*
- 3: *Appropriate Infant and Young Child Feeding Practices (IYCF) are critical for improving nutrition, child survival and development. Though 100 percent exclusive breast feeding practices for first six months are reported, in a few districts girls are denied exclusive breastfeeding. Age old beliefs and social norms need to be properly addressed to improve the colostrum feeding to the new born child.*
- 4: *Periodical growth monitoring is essential to encourage sound child-care and feeding practices. This is the regular practice in the majority of the AWCs, however in a few AWCs periodical growth monitoring is not taking place because the baby weight scales are in a dilapidated condition.*
- 5: *Supplementary nutrition program is primarily designed to bridge the gap between the Recommended Dietary Allowance (RDA) and the Average Dietary Intake (ADI). Though SNP (Balamrutham) for children is available in all sample centres, the quality of food (quality of rice and egg) is the major concern.*
- 6: *Children with Severely Acute Malnutrition (SAM) are nine times more likely to die than well-nourished children. The management of SAM as well as moderately acute malnutrition (MAM) is critical for child survival. MAM cases are reported high among boys and the situation is the worst in AWCs providing services in tribal areas. Quite a few SAM cases are also reported in a few districts.*
- 7: *Pre-school education plays a vital role in transferring child into formal schooling. Though higher enrolments are reported in pre-schools, the number of children attending (21 days per month) is very low. Often pre-school activities are kept aside due to other activities. PSE modules are not being used in many AWCs.*
- 8: *Observation of two Nutrition and Health Days is a non-negotiable service in AWCs. Substantial numbers of AWCs are observing NHDs once in a month, which may hamper needed services to the beneficiaries.*
- 9: *Stakeholder participation (more specifically elected members of Panchayat Raj) is crucial factor ensuring success to ICDS services. Low participation by ICDS Supervisors as well as elected members of PRI is another policy concern to be addressed immediately.*

*Source: CESS (2016) "Concurrent Monitoring of Selected ICDS Centres in Telangana State", (Monitoring Results for Equity System with Special Focus on Nutrition), Division for Child Studies, Centre for Economic and social Studies and UNICEF, Hyderabad.*

# Sustainability of Improvements in Human Development

## 7.0 Introduction

This chapter is an attempt to assess the natural resource base relating to agriculture in rural areas, and basic health facilities like safe drinking water and sanitation within the household premises in rural and urban areas, to sustain the improvements in human development across the newly formed districts of Telangana State.

The sustainability of improvements in human development in rural areas depends basically on agriculture. Agriculture in rain-fed areas is subject to unfavourable weather cycles. The farming community is increasingly dependent on the extraction of ground water for irrigation. The over exploitation of ground water results in unsustainable ground water resource use and agricultural distress. The flow of incomes of the rural communities from agriculture and allied activities goes down and, as a result, household investment on education and health slows down. This ultimately results in the deceleration in the improvement of human development. Agriculture in Telangana State today is more dependent on ground water because of the neglect of its traditional tank irrigation system in the combined state. The revival of the traditional tank system enables the storage of more water in the tanks and the recharge of ground water. The deviation between the actual and normal rainfall is reflected in unfavourable weather cycles. The moisture stress during crop growth also reduces the yield of the crops and thereby agricultural productivity during unfavourable weather cycles. The absence of adequate forest cover, which acts as a hedge against unfavourable weather cycles, further adds to the stress in the availability of moisture.

Three dimensions of natural resources, viz., moisture, ground water and forest cover are considered to

capture the status of the natural resource base of agriculture. Moisture is measured through the moisture index (MI). The moisture index is the most frequently used tool to assess the magnitude of water deficiency in dryland areas. The higher (lower) value of MI indicates the more (less) water potential. MI shows the gap between the supply of water (precipitation) in an area relative to the demand for water under the prevailing climatic conditions (potential evapotranspiration). The state of ground water exploitation is measured as the percentage of annual ground water draft to net annual water availability. The higher the exploitation of groundwater resource the greater is the stress on the environment.

The availability of forest areas and resources is assessed in terms of the percentage of area under forest. Higher forest area means a greater stock of forest resources. The extent of forest area represents the stock of forest resources as well as rainfall. Adequate forest cover moderates the temperature which helps the retention of more moisture in hot weather and also the retention of more water in the soil. This ultimately facilitates the recharge of ground water. The other benefits of forest/tree cover are that soil erosion can be arrested. Moreover, forest cover also reduces the gap in the supply of water (precipitation) relative to the demand for water. Adequate forest cover is essential for increasing ground water recharge as well as increasing the moisture in the soil.

The status of these three resources determine the sustainability of agriculture and thereby the human development of rural communities in terms of income, education and health. Access to safe drinking water and sanitation facility within the household premises ensure congenial hygiene conditions for good health. All these factors

*Sustainability of improvements in human development in rural areas depends basically on agriculture*

*Over exploitation of ground water results in unsustainable ground water resource use and agricultural distress result in low household investment on education and health*

*Moisture stress during crop growth also reduces the yield of the crops and thereby agricultural productivity during unfavourable weather cycles*



*38 percent of the mandals in the state are extremely and highly resource deprived*

*Around three-fourths of the mandals in some of the districts experienced natural resource deprivation*

ultimately contribute to the sustainability of the improvements in human development.

In the above backdrop, this chapter more specifically examines the following issues: What is the status of natural resources and basic household health facilities in the districts of Telangana State? What are the concerns emanating from the status of these resources across the districts? And, do the existing policies of Government of Telangana have the potential for addressing these concerns?

## **7.1 The Status of Natural Resources and Basic Health Facilities in the Districts**

The status of natural resource deprivation and basic health facilities for each of the mandals across the districts of Telangana State is based on the data from the India Meteorological Department (IMD), Central Ground Water Board (CGWB) and Census 2011. After the restructuring of districts and mandals, the mandals have been reorganized across the 30 districts on the basis of the Government Orders and corresponding data regarding natural resource deprivation, drinking water and sanitation (toilet facility) within the premises of the households (for methodology, see Chapter 7: Appendix, Natural Resources and Human Development). As the data is not discretely available for the portion of mandals that have been reorganised as well as the newly formed mandals, they may assume the features of the mandals of their origin. An effort is also made to plot all the three aspects in the mandals of each district map (Maps 7.1 to 7.31 in Appendix IV) and district averages in the state maps (Maps 7A, 7B and 7C in Appendix IV).

### **7.1.1 The Status of Natural Resources in the Districts**

The natural resource deprivation index for 435 rural mandals spread across the 30 districts of Telangana State has been constructed for the year 2013-14 by using three indicators-moisture index, stage of groundwater development and percentage of area under forest. A mandal having lower MI value is in a comparatively higher water scarcity condition than a mandal having higher MI value. The MI value across all Telangana mandals ranges from -72.07 to -10.69 implying that mandals having a higher MI value have more water potential than the mandals which have a low MI value. The stage of groundwater exploitation is measured as the

percentage of annual ground water draft to net annual ground water availability. The availability of forest areas is assessed in terms of the percentage of area under forest. All the mandals of Telangana are ranked in ascending order on the basis of these three indicators (e.g. rank 1 means a mandal having more water potential, lower exploitation of groundwater and more area under forest).

The composite index was constructed by combining these ranks by using the Borda Rule. The mandals are again ranked in ascending order on the basis of the composite index score to identify the natural resources deprived mandals (i.e. rank 1 means less natural resource deprived mandal). The bottom 25 percent ranked mandals are considered as 'Extremely Natural Resource Deprived' mandals; 25%-50% of the lower rank mandals are considered as 'Highly Natural Resource Deprived' mandals, and the rest of the mandals are Natural Resource Non-Deprived' mandals.

Against this backdrop, the analysis of the data available on the state of natural resources has brought out many interesting insights. 38 percent of the mandals in the state are extremely and highly resource deprived (Tables A7.1 and A7.1 a). This percentage may go up further if data is available for 26 percent of the mandals. The percentage of natural resource deprived mandals may go up to around 50 percent, if the majority of these mandals fall under the category of the resource deprived mandals. The distribution of natural resource deprived mandals across the newly formed districts has brought out clearly that around three-fourths of the mandals in the districts Siddipet, Yadadri, Ranga Reddy, Mahbubnagar, Nagarkurnool and Nalgonda had experienced natural resource deprivation. The other districts that demand attention are Jangaon, Jogulamba, Karimnagar, Mahabubabad, Medak, Medchal, Rajanna, Sangareddy, Suryapet, Vikarabad, Wanaparthy, Warangal rural and Warangal urban.

The unpacking of natural resource deprivations also has pointers for immediate policy attention. The extremely deprived mandals of the districts have suffered from deprivation in all the dimensions or at least two dimensions of the natural resources considered for the analysis across the districts. However, the highly deprived mandals had suffered from at least one dimension of natural resources deprivation across the districts. Overdrawing of



ground water is found to be the dominant source of natural resource deprivation across many of the extremely deprived and the highly deprived mandals. This is the fallout of high dependency on borewell irrigation neglecting the traditional tank irrigation system without adding significantly to the canal irrigation system. Well irrigation based agriculture in dry land areas of Telangana, often subject to unfavourable weather cycles, has pushed the rural communities into a debt-trap and ultimately led to extreme forms of distress i.e., farmers' suicides. This has denied the rural communities the opportunity to invest adequately in children's education and the health of family members. In the absence of this process, the improvements in human development might have been much higher.

Of course, the income enhancement and social security programmes of the government have come to the rescue of the rural communities in this context to compensate for the low income flows from inadequate agricultural growth, and especially in the years of unfavourable weather cycles. The lower forest resource base and moisture stress have resulted in extreme forms of deprivation of natural resources in the mandals across the districts. Hence it is clear that improvements, reduction in inequalities and sustainability of improvements in human development across the districts in Telangana State are possible through addressing natural resources deprivation in rural areas.

### 7.1.2 Basic Health Facilities in the Districts

The household health facilities in terms of access to adequate safe drinking water and access to toilets in the household premises are equally important along with public health infrastructure in determining the health status, one of the components of human development in rural as well as urban areas of Telangana, as elsewhere in the country. It is evident from the data that around half of the households in Telangana have no access to drinking water and access to toilets within the premises (Table A7.2). The deprivation with regard to these facilities is pronounced in the districts of Adilabad, Jogulamba, Kamareddy, Komaram Bheem, Mahbubnagar, Medak, Nagarkurnool, Nalgonda, Nirmal, Sangareddy, Vikarabad, and Wanaparthy. Further unpacking of the districts in this regard in terms of mandals in the districts with the percentage of households covered has revealed many interesting insights. In around 50 percent of households in

50 percent of the mandals of 18 districts (Adilabad, Jangaon, Jayashankar, Jogulamba, Kamareddy, Komaram Bheem, Mahabubabad, Mahbubnagar, Nagarkurnool, Nalgonda, Nirmal, Medak, Nizamabad, Sangareddy, Suryapet, Vikarabad, Wanaparthy and Yadadri) do not have both drinking water and sanitation facilities in the household premises. This is the gravity of the situation of the basic health facilities at the household level (Tables A7.1 and A7.1a). The details of the mandals in each category in regard to the extent of coverage of households for each district have been presented in the maps (Appendix IV).

### 7.2 Emerging Concerns

The incidence of natural resource deprivation is pronounced across the districts of Telangana due to overdrawing of ground water, lower forest base and higher moisture stress. The situation is equally bad in regard to household facilities like the availability of safe drinking water and toilet facility in the household premises. Further there are huge variations across the districts in these resources. The reduction in the levels of natural resources deprivation and improving access to the basic two health amenities at the household level will bring about a further improvement in human development and lessen the existing inequalities across the districts and contribute to the sustainability of the improvement in human development.

### 7.3 Government Policies and Emerging Concerns

There are five public policy interventions of the Government of Telangana which have the potential to address the concerns that have emerged from the analysis. They include Mission Kakatiya, major and medium irrigation projects, watershed development, Mission Bhagiratha and Harithaharam. Mission Kakatiya has the potential for renovating the entire tank irrigation system in Telangana. Removal of silt from the tanks enhances the water storage capacity of the tanks and facilitates the storage of rain water. This ultimately increases the ground water recharge also. The application of the silt taken out from the tanks has the potential for increasing soil health and thereby augmenting land productivity. The watershed projects have the potential for conserving rain water in situ and thereby reducing the moisture stress. The irrigation projects have the potential to change the irrigation profile

*Extremely deprived mandals have suffered from deprivation in all the three dimensions or at least two dimensions of the natural resources considered*

*Around half of the households in Telangana have no access to drinking water and access to toilets within the premises*

*Around 50 percent of households in 50 percent of mandals in 18 districts do not have access to both drinking water and sanitation facilities in their premises*

and reduce the over exploitation of the available ground water. The integration of these three interventions reduces moisture stress and over use of ground water. Thus, the natural resources deprivation due to moisture stress and ground water stress can be addressed through the interventions in the irrigation sector. Harithaharam programme has the potential for enhancing the forest resource base of the villages. Mission Bhagiratha project has the potential for providing safe drinking water to all the households in the household premises in

Telangana State. This also reduces the use of ground water for drinking purpose as the water for this project is being drawn from the two perennial rivers Krishna and Godavari.

To conclude, the contributions of the above mentioned five interventions together will arrest the inequalities in the availability of natural resources and basic health facilities of the households which will ultimately contribute to a reduction in inequalities, and sustain the improvements in human development.

# Summary, Conclusions and Policy Implications

## 8.0 Context

The fledgling State of Telangana has to address many challenges. Improving human development along with reducing inequalities in human development is one of the challenges that the state needs to prioritise. This report is an attempt to benchmark the pattern of human development in terms of levels, improvements and inequalities across districts, rural-urban areas, caste groups, gender groups and occupational groups in Telangana before the formation of Telangana State. The association of the patterns of human development with economic growth, public development funds and institutions of health and education are examined to identify concerns that need to be addressed by the Government of Telangana. Also the implications of the agriculture related natural resource deprivation and basic health facilities for human development are analysed. The major findings, emerging challenges and the potential impact of the policies of the government of Telangana are discussed in the report.

## 8.1. Human Development Patterns

Chapter 2 assesses the status of human development in Telangana before the bifurcation of Andhra Pradesh State. The human development outcomes in 2004-05 and 2011-12 have been assessed to identify concerns arising out of the public policies pursued in the combined state. This was also a period of high economic growth in Telangana.

There has been a significant improvement in HDI across all the Indian States. The rank of Telangana improved from 13 in 2004-05 to 10 in 2011-12. The improvements in HDI at the state level are also reflected at the district level. There has been an improvement in HDI across all the districts of

Telangana during the period under consideration. Hyderabad and Ranga Reddy have retained their top two positions in the spectrum of human development of Telangana, in both the years (2004-05 and 2011-12). Nizamabad, Mahbubnagar and Medak have remained at the bottom. Warangal, Karimnagar, Khammam, Adilabad and Nalgonda have stayed in the middle. The districts with a low human development in 2004-05 had improved their human development faster by 2011-12 in comparison to the districts with higher human development in 2004-05. The same is true in case of the components of human development-income levels or standard of living, health and education. Gender inequalities have declined across the districts as also the gaps in human development across the caste groups (SCs, STs, BCs and OCs). The pace of decline in inequalities was higher in the urban areas than in the rural areas. With regard to occupational groups, the inequalities declined in the rural as well as the urban areas. The status of HDI of Muslims has increased during 2002-13. Urban-rural HDI inequalities among them have also declined, though not consistently, during the corresponding period. All these have contributed to the decline in inequalities across the districts. However, it is evident that inequalities persist across districts, rural-urban areas, caste groups, gender groups and occupational groups.

Will the **Business as Usual** approach in terms of the continuation of the public policies of the combined state by the Government of Telangana accelerate the process of enhancing the levels of human development and reduction in its spatial, social and occupational inequalities? The impact of the continuation of policies of the combined state in the future has been assessed through the estimated HDI for 2015, on the basis of the rates

of improvement in the components of HDI between 2004-05 and 2011-12 across the districts. But the results indicate that the **Business as Usual** approach would not bring any remarkable shifts in the patterns of human development. Moreover, the rate of decline of inequalities across caste groups in human development during the period 2007-08 and 2012-13 was considerably higher than during 2002-04 and 2007-08. Sustaining this rate of reduction is required. This would also be true in the case of social groups and occupational groups to reduce persistent inequalities. Hence, continuing the same policies will not enable Telangana State to sustain this rate of decline in inequalities. Hence, significant changes are required in public policies and programmes in relation to human development.

The share of the standard of living in the total change in HDI between 2004-05 and 2011-12 is higher for most of the districts whereas the shares of health and education have been lower. All these are in line with the developments that had taken place across the major states in India. The same is true across the social groups and occupational groups in Telangana. Continuing the same policies will not enable Telangana State to expand the contribution of the components of education and health to human development. All the above demands that Telangana State has to embark upon remarkable changes in public policies.

## 8.2 Economic Growth and Human Development

There are two broad issues in the recent debates about the relationship between economic growth and human development. They are: the relationship between economic growth and human development has weakened in recent times; and high economic growth may not necessarily result in high human development. In this backdrop, chapter 3 has examined the relationship between economic growth and human development across the districts between 2004-05 and 2011-12 which was also the period of high growth in recent times for Telangana. The level of economic growth, the nature of economic growth (in terms of diversification of growth from agriculture to non-agriculture with improvements in household employment and income), the percolation of economic growth to household income, the link between growth in household income and growth in human development are the

pathways that establish the linkage between economic growth and improvements in human development. At the same time, the link between growth in human development - growth in labour productivity - economic growth is also crucial. All these conditions should go hand in hand for connecting economic growth with growth in human development and vice versa.

The comparison of the estimated relationship between economic growth and human development in 2004-05 as well as in 2011-12 across the districts in Telangana has highlighted two important points. *They are:* In 2004-05, one percent of economic growth has led to nearly 0.7 percent growth in human development. But in 2011-12, one percent of economic growth has resulted in only 0.24 percent growth in human development. That is, an acceleration of economic growth by three times is required to arrive at 0.7 percent growth in human development. This indicates that the weakening of the relationship between economic growth and improvement in human development is putting pressure on economic growth and requires higher economic growth targets for Telangana State. It is also interesting to note that the relationship has weakened during a period of higher economic growth. The linkages of economic growth with improvement in educational status and health status of households have also weakened across the districts. These are a cause of serious concern in Telangana.

Turning to a disaggregated analysis of the relationship between economic growth and improvement in human development at the district level, it is evident that high growth is a necessary but not a sufficient condition for bringing about improvements in human development. It is apparent that inclusive economic growth has contributed to improvements in human development. The supplementation by state interventions to household income outside the growth process in terms of income enhancement and social security programmes helped the districts with lower economic growth to realise higher improvements in human development. Hence the weakened relationship of economic growth with the growth in educational and health status can be strengthened by allocating more funds on education and health. Moreover, this also demands the allocation of more funds to improve the education and health status from the revenues generated through higher economic growth. This ultimately

expands the contribution of education and health to the changes in human development.

### 8.3 Development Expenditure and Human Development

It is evident from the analysis in chapter 3 that the improvements in human development are determined by the policies of economic growth. The income enhancement and social security policies supplementing the growth policies have resulted in improvements in human development. It is also evident that human development in turn has contributed to economic growth through labour productivity. Apart from the contribution of growth and the income enhancement and social security policies, the direct policies that largely influence human development should also be examined. This is the crux of chapter 4. The analysis in this chapter is based on three premises that are frequently debated: that the funds allocated to social sector (especially health and education sectors) are inadequate at the country as well state level; the funds allocated are not efficiently utilised; and there is a need to expand the contribution of education and health to the improvement in human development in the context of the weakening relationship of economic growth with educational and health status. These issues are analysed at the district level. In order to examine the issue of the contribution of funds under economic services to economic growth, the funds allocated under economic services are also included in the framework of analysis. The analysis is based upon the relationship between the funds allocated in 2004-05 and the human development outcomes in 2011-12.

The (in)adequacies in the allocation of funds and (in)efficiencies in the utilisation of funds allotted are assessed through linking funds to the human development status/health status/educational status across the districts. The districts of Warangal, Khammam and Adilabad were allocated adequate funds. Ranga Reddy, the top human development district, has efficiently utilised the funds allotted under social services. Similarly, Karimnagar the middle order district has utilized funds efficiently while Nalgonda has not utilised the same efficiently. The bottom three districts-Nizamabad, Mahbubnagar and Medak-have suffered from inadequate funds. The funds allocated under

economic services are inadequate in some of the districts.

Funds allocated under health services were inadequate for the bottom human development districts-Nizamabad, Mahbubnagar and Medak; and also for Nalgonda, the middle order district. They were inefficiently utilised in Khammam and Adilabad-the two tribal concentration districts, while Ranga Reddy and Karimnagar districts have utilised the funds efficiently. Funds allocated under educational services were inadequate for Medak, the bottom human development district. Nalgonda, Warangal and Mahbubnagar have inefficiently utilised the funds under educational services.

The allocation of funds by 2011-12 in relation to the funds allotted in 2004-05 is analysed to assess whether the demand for funds arising out of the allocation of funds in 2004-05, across the districts has been taken into cognizance. This is examined through the assessment of the relationship between the growth in expenditure under social services and the growth in human development during 2004-05 and 2011-12. The available evidence shows that the allocation of funds by 2011-12 has not been made on the basis of the level of demand. Similarly, by 2011-12, the allocation of funds under economic services for some of the districts was not adequate to increase economic growth. The allocation of these funds is not properly prioritised across the districts.

### 8.4 Educational Institutions and Educational Status

The patterns of human development are further located in the institutions of education and health. The functioning of these institutions is assessed in terms of outcomes in the development of educational and health status and the relationship of these outcomes with the existing infrastructure.

Noticeable achievements in the domain of education in Telangana are: the considerable decline in the incidence of children who never attended school over time; near universal primary school enrolment; and, a decline in the inequalities across the districts, rural-urban areas, gender and caste groups in primary school enrolment.

However, enrolment has declined beyond upper primary schooling among all the social groups, and especially among the children belonging to SCs and STs.



The dropout rates have been declining over time. But, the children from SCs and STs constitute a larger share who dropped out from primary and upper primary schooling. The high dropout rates at the primary and at the upper primary levels have an impact on the enrolment of children at the secondary and higher secondary levels.

The quality of learning outcomes in terms of numeracy and literacy appropriate to the grades has declined over time. The private schools have not penetrated into the districts where the quality of learning outcomes of children is poor or into the districts where the government school infrastructure is inadequate. Parents have responded positively to the policies of the government to enroll the children in government schools. But the quality of learning outcomes of children in government schools is poor compared to private schools. The rising aspiration of parents, especially mothers to improve the educational trajectories of their children is clearly visible. This is reflected in the fact that even illiterate mothers are sending their children to private schools thus investing in their children's education. More boys than girls, a relatively lower proportion of children from SCs and STs and also from the poor are enrolled into private schools with the hope that the private schools would provide quality education. Moreover, income inequalities across the social groups have widened the existing social divide across gender, caste and class w.r.t schooling.

The population projections suggest that in the state there would be about 47 lakh children in the age group of 7-14 years by 2026. This puts a lot of pressure on the state to increase the educational infrastructure (more schools, more infrastructure, especially toilets for girl students, more teaching staff and teaching aids). Hence the required finances need to be worked out through decentralised planning involving communities and local bodies. These concerns demand a big push in terms of further reforms from the Government of Telangana.

### 8.5 Health Institutions and Health Status

Public health infrastructure and household health facilities are related to general health and reproductive health. The reproductive health status is related to the incidence of mortality (child mortality and maternal mortality) and nutritional outcomes of children.

The inadequacy of public health infrastructure has constrained the health status in some of the districts of Telangana, while the inefficient utilisation of the public infrastructure has depressed the health status in some other districts. Similarly, the reproductive health status is affected due to the inadequate and inefficient utilisation of public infrastructure. There have been significant improvements in reproductive health practices in terms of antenatal care, institutional deliveries, post-natal care and child care practices-breastfeeding and immunisation-in Telangana. Services under RMNCH+A improved the reproductive health status in Telangana.

However, there are serious concerns that need to be addressed. A fairly high proportion of pregnant women availed ANC facility in their first trimester but failed to avail at least four ANC during pregnancy. This highlights the urgent need to increase ANC coverage in the first trimester to cent percent. The complete ANC package (3+ ANC visits, 1+TT injection and 100 IFA tablets) for pregnant women remained at 42 percent at the state level. Over an eight year period, complete ANC increased only marginally. Though institutional deliveries increased over time, deliveries at home are still taking place in Adilabad and Mahbubnagar, due to lack of adequate health care facilities for delivery at public health institutions. The MMR is high in these districts. Caesarean sections were carried out in 58 percent of pregnancies which is on the high side as per the norms of the World Health Organisation. The percentage of children breastfed by mothers within one hour of birth reached 54 percent by 2012-13.

In Telangana, 68 percent of the children were fully immunized (Rural 68.3% and Urban 67.8%) during 2015-16. The relatively low percentage of DPT3 and OPV3 were responsible for the low percentage of full immunization. The IMR in Telangana state declined to 34 per 1000 live births in 2015, compared to 35 in 2014 (SRS, 2015). However, the latest NFHS Survey 2015-16 reported that IMR in the State is 28. A further reduction of IMR requires better medical care at the neo-natal stage which should be extended during pregnancy and delivery. Telangana/combined Andhra Pradesh becomes the fourth best state in the country with the lowest MMR ((92) after Kerala (61), Tamil Nadu (79) and Maharashtra (68). However, there

are wide inter-district variations in MMR ranging from 71 in Hyderabad to 152 in Adilabad.

A high percentage of children are stunted in the tribal concentration districts Khammam and Adilabad and the bottom level HDI districts Nizamabad, Mahbubnagar and Medak. A better reproductive health status enhances the nutritional status of children.

The population of women in the reproductive age (15-49 years) is expected to increase from 98 lakh in 2011 to 126 lakh in 2026, growing at the rate of 1.7 percent per annum. This future situation would create a severe pressure on addressing maternal, new born and child health services in the coming years.

## 8.6 Sustainability in Human Development

The incidence of natural resource deprivation is pronounced across the districts of Telangana due to overdrawing of ground water, lower forest base and higher moisture stress. The situation is equally bad in regard to household facilities like the availability of safe drinking water and toilet facility in the household premises. This will have implications to improvements, inequalities and sustainability in human development.

## 8.7 Policies of Government of Telangana and Emerging Challenges

The policy framework of the Government of Telangana should be related to the concerns emerging from the above analysis to have a greater impact for improving human development and reducing inequalities, strengthening the inter-linkages between economic growth and human development; providing adequate public funds for social and economic services; and strengthening the functioning of public institutions relating to education and health.

The state is planning to function on a decentralised-participatory model of development. The decentralisation measure in terms of reorganising the 10 districts into 31 districts stands as evidence to this and offers a greater potential for reducing inter-district inequalities in economic growth and human development. Further, all the institutions including education and health at the district level and below become accountable and transparent for

the people as the administrative area becomes smaller and direct interaction between people and government also becomes feasible. Given the active civil society, the participation of people in monitoring local governance and other institutions becomes possible. It also has tremendous potential for addressing concerns specific to the districts. Integrating village plans and aggregating them at the mandal and in turn at the district level becomes easy. In these plans fixing the targets for human development, economic growth and linkages of economic growth-human development -economic growth at the district level becomes possible. Hence this initiative can address the concern about strengthening the functioning of the institutions, especially relating to health and education, and the preparation of practical district plans to fix the targets of economic growth and human development and their interrelation.

The recent budget of Telangana State has made budget allocations to the backward castes, the Most Backward Castes, Scheduled Castes, and Scheduled Tribes and Minorities. This would be a strong contribution to inclusive growth. This new social framework model for the development of Telangana has the potential for inclusive economic growth and social development (human development). This also enables the state to link human development to economic growth through utilising the existing stock of skills of the Backward and the Most Backward Castes. This policy initiative addresses the concern which has been spelt out in the analysis that economic growth should be inclusive and that human development should also contribute to economic growth through the efficient utilisation of the existing skills and subsequently upgrading the skills of the people. It also addresses the concern that inequalities in human development among social and occupational groups should be reduced.

It is evident from the analysis that high economic growth is a necessary condition for improvements in human development. There are variations across the districts in regard to economic growth and hence variations in human development. Mission Kakatiya for renovating tanks and revitalising traditional irrigation structures will bring vibrancy in agriculture and allied agriculture sectors of the rural economy. This also contributes to the small farm holders since a large proportion of these farmers have lands under tanks. Further, the fixed cost and running costs of

irrigation systems like borewells will come down and the cost of cultivation will decline to that extent. The initiatives in terms of the landmark industrial sector policies to augment the industrial base of the state and the expansion of Information Technology have the potential to boost growth in the industrial and service sectors of the economy. Thus the vibrancy in these three sectors has the potential for increasing economic growth in the state.

The expansion of the industrial sector, especially agro-based industries, enables the labour force to shift from agriculture to non-agricultural activities. As a result, productivity goes up in both the sectors and the income disparities between the two sectors will decline. The government has also initiated measures to include households belonging to SCs, STs and women to be a part of the expansion of the industrial base as entrepreneurs to make industrial growth inclusive. These initiatives in agriculture and non-agriculture sectors will also make economic growth inclusive.

There are emerging concerns that some of the mandals in the newly formed districts are deprived in terms of the natural resource base (moisture status, groundwater and forest cover) and basic household health facilities like drinking water and sanitation in house premises. Harithaharam and Mission Bhagiratha have the potential to address these concerns. Harithaharam has expanded the tree cover throughout Telangana which would contribute to

a reduction in temperatures resulting in less evaporation of water in rural and urban areas. Mission Bhagiratha has the mandate of providing adequate and safe drinking water to all the households in their premises across the villages and urban areas. The water for this mission is drawn from the two perennial rivers Godavari and Krishna. This would reduce the withdrawal of ground water for drinking purposes. Mission Kakatiya would also add to the ground water resources. These three initiatives together with the planned major and medium irrigation projects and watershed programmes have the potential for protecting the natural resource base and provide drinking water, the basic health facility.

The state has initiated measures to address the concerns in education and health sectors. This has the potential for improving the functioning of the education and health institutions in the state. Thus the DECENTRALISED - NEW SOCIAL FRAMEWORK - SUSTAINABLE DEVELOPMENT MODEL of the Government of Telangana is radically different from the DEVELOPMENT MODEL pursued in the combined state. The innovative development model also has the potential to improve the negotiating capacity of Telangana State with the national government and international institutions for financing human development-economic growth and their linkages. However, the state has to establish an official unit for monitoring human development.

# Appendix I

## Chapter-wise Data Sources and Research Methodology

### Chapter 1 Appendix

A1: List of Indicators and Source of Data		
Indicators	Data Source	Details
<b>Computation of HDI</b>		
Monthly Per Capita Consumption Expenditure (MPCE) 2004-05 prices (Rs.)	NSSO Consumer Expenditure Survey	61 <sup>st</sup> Round (2004-05) 68 <sup>th</sup> Rounds (2011-12)
Infant Mortality Rate (IMR)	Statistical Abstracts, GoAP (Undivided)	2004-05 and 2011-12
Adult Literacy (15 Years +) (%)	NSSO Employment and Unemployment Survey	61 <sup>st</sup> Round (2004-05) 68 <sup>th</sup> Round (2011-12)
Mean Years of Schooling (Number of Years)		
Life Expectancy at Birth (for major states of India)	SRS Bulletins	2004-05 and 2011-12
<b>Computation of HDI across Social Groups and Occupations</b>		
Comprehensive Coverage Index	District Level Household Survey (DLHS)	Round II (2002-04) Round III(2007-08) Round IV (2012-13)
Standard of Living Index		
Mean Years of Schooling (Number of Years)		
<b>Computation of Male and Female HDI</b>		
Gross District Domestic Product (2004-05 prices)	Statistical Abstracts GoAP (Undivided)	2004-05 and 2011-12
Infant Mortality Rate (IMR)		
Literacy (7 Years +) (%)	Primary Census Abstract	Census 2001 and 2011
Mean Years of Schooling (Number of Years) Average Daily Wages for male and female (Rs)	NSSO Employment and Unemployment Survey	61 <sup>st</sup> Round (2004-05) 68 <sup>th</sup> Round (2011-12)
Population	Primary Census Abstract	Census 2001 and 2011
Workers		
<b>District-wise Public Expenditure Data</b>		
Percapita Expenditure on Social Services at 2004-05 prices (Rs)	https://treasury.ap.gov.in Accessed in May 2014 Census 2001 and 2011 Statistical Abstract 2015, GoT	2004-05 to 2012-13
Percapita Expenditure on Economic Services at 2004-05 prices (Rs)		
Percapita Expenditure on Education at 2004-05 prices (Rs)		
Percapita Expenditure on Health at 2004-05 prices (Rs)		

A1: cont.....

Indicators	Data Sources	Details
<b>Education Dimension of Human Development</b>		
Percentage Literacy and levels of Literacy Male/Female Rural/Urban SC/ST Adults /Youth	Primary Census Abstract	Census 2001 and 2011
Net Enrolment at Secondary and Higher Secondary level (%) School Attendance (%) Dropout rate (%) Never attended (%)	NSSO Employment and Unemployment Survey	50 <sup>th</sup> Round (1993-94) 68 <sup>th</sup> Round (2011-12)
Human Resources and Physical Infrastructure	District Information System for Education (DISE)*	2004-05 to 2013-14
<b>Health Dimension of Human Development</b>		
Reproductive Health Care (All Indicators)	District Level Household Survey (DLHS)  National Family and Health Survey 2015-16	Round II (2002-04) Round III (2007-08) Round IV (2012-13) Round IV (2015-16)
Mortality  Child Nutrition Child Immunisation  Health Infrastructure	District Level Household Survey (DLHS)	Round II (2002-04) Round III (2007-08) Round IV (2012-13)
<b>Natural Resource Deprivation and Health Support Facilities</b>		
Rainfall and Temperature	India Meteorological Department (IMD)	2013-14
State of Groundwater Development	Central Groundwater Board (CGWB)	2013-14
Forest Area	Census 2011  District Census Hand Book	
Drinking Water		
Sanitation		

\*<https://www.dise.in> accessed in January 2016



## A2.0 Human Development Index (HDI)

Human Development Index (HDI) is a summary measure of human development. It measures the average achievement of a district in three basic dimensions of human development - a decent standard of living, knowledge and a long and healthy life. The HDI is a geometric mean of normalised indices from each of these three dimensions.

$$HDI_j = (I_{yj} \times I_{kj} \times I_{hj})^{1/3}$$

Where,  $HDI_j$  is Human Development Index of  $j^{th}$  district and  $I_{yj}$ ,  $I_{kj}$  and  $I_{hj}$  are normalised dimension indices of the  $j^{th}$  district for standard of living, knowledge and a long healthy life respectively. The normalised dimension index,  $I_{ij}$  is given by

$$I_{ij} = (X_{ij} - Min_i) / (Max_i - Min_i),$$

Where  $X_{ij}$  refers to the attainment of the  $j^{th}$  district with respect to the  $i^{th}$  indicator and  $Max_i$  and  $Min_i$  are the maximum and minimum goal posts for the  $i^{th}$  indicator for all the districts respectively. The same approach is followed for computing HDI for Gender, Social and Occupational groups.

District level Human Development indices are constructed for two time periods i.e. 2004-05 and 2011-12. The indicators used for the above mentioned three dimensions of human development are:

**Decent standard of living:** It is measured by average Monthly Per Capita Consumption Expenditure (MPCE) adjusted for inequality. The adjusted MPCE is given by

$MPCE(Adj) = MPCE(1-G)$ , where  $G$  is gini coefficient of inequality.

Data on MPCE for the year 2004-05 are taken from 61<sup>st</sup> round of NSSO on Consumer Expenditure Survey and the data for the year 2011-12 are taken from 68<sup>th</sup> round.

**A Long and healthy life:** It is measured by life expectancy at birth. Since district-wise estimates on life expectancy at birth are not available we have used Infant Survival rate. Infant Survival Rate is obtained by deducting the number of infant deaths from 1000 in a given year. (*Infant Mortality Rate (IMR)* compares the number of deaths of infants per 1000 live births in a given year. Children under the age less than one year are defined as infants). We have estimated the district-wise infant mortality rates for the years 2004-05 and 2011-12.

**Knowledge:** It is measured by adult (15+ age) literacy (with one-third weight) and mean years of schooling (6-14 years) (with two-thirds weight). The average years of schooling is adjusted for percentage of out of school children. The data for these two indicators are drawn from 61<sup>st</sup> and 68<sup>th</sup> rounds of NSSO on Employment and Unemployment Survey pertaining to 2004-05 and 2011-12 periods respectively.

The goalposts for the indicators are fixed at absolute levels to permit inter-temporal comparisons are given as under.

Sl.no	Indicator	Minimum	Maximum
<b>I</b>	<b>Decent standard of living</b>		
1	Adjusted Average Monthly Per Capita Consumption Expenditure at 2004-05 prices (Rs.)	400	2500
<b>II</b>	<b>A long and healthy life</b>		
1	Infant Survival Rate (Per 1000)	900	990
<b>III</b>	<b>Knowledge</b>		
1	Adult Literacy Rate (15 + age)	0	100
2	Mean Years of Schooling (Children 6-14 years)	0	10

The log values of adjusted MPCE have been used for decent standard of living index as per the standard procedure. In the case of knowledge the adult literacy rate and mean years of schooling are normalised as per the procedure described above and combined them using the following equation

$$I_{kj} = (I_{aj}^{1/3} \times I_{bj}^{2/3})$$

Where,  $I_{aj}$  is Normalised Index of Adult Literacy Rate and  $I_{bj}$  is Normalised Index of Mean years of Schooling (6-14 years) for jth district.

## A2.1 Human Development Index for Social and Occupational Groups

The human development indices for social and occupational groups are constructed adopting broadly the UNDP approach. However, the indicators considered for construction of component wise indices vary from those employed in the standard measurement of HDI. The HDIs are computed using the DLHS data for three rounds viz., DLHS II (2002-04), DLHS III (2007-08) and DLHS IV (2012-13) for social groups and the DLHS II and DLHS III Rounds for occupational groups. The occupation of the female respondent is considered for constructing human development index across occupations. The occupational details in DLHS III are available for women respondents only while the occupational details for all the members of households are available in DLHS IV. In order to bring uniformity we have considered only occupations of female respondents for both rounds. The description of broad occupational groups is presented in Table A2.1. However, HDIs are not presented for those occupational groups whose percentage shares are low in the total occupational groups. The components of HDI are standard of living, health coverage and education which represent the dimensions of decent living, longevity and knowledge respectively for social and occupational groups. It may be noted that the social and occupation groups HDIs are not comparable with HDI for districts as the indicators and the data sources are different.

Table A2.1: Percentage Distribution of Women by Occupation

Occupation	Rural		Urban	
	2007-08	2012-13	2007-08	2012-13
Professionals / Senior Executives	2.1	1.4	16.2	15.4
Clerical / Supervisors	0.3	0.3	2.4	4.2
Self-employed- Trade	2.0	1.5	8.9	8.8
Skilled Labour	10.2	6.1	25.5	20.1
Casual Labour in Services	0.6	0.8	5.3	5.7
Unskilled Labour	21.6	10.1	27.2	20.3
Self-employed-agriculture & allied	9.3	18.2	1.6	5.9
Casual Labour-agriculture & allied	53.9	61.7	12.9	19.6
All Occupations	100.0	100.0	100.0	100.0

## Standard of Living Index (SLI)

The following scores are assigned to the indicators used in standard of living index

*House type:* 4 for pucca, 2 for semi-pucca, 0 for kachha;

*Toilet facility:* 4 for own flush toilet, 2 for public or shared flush toilet or own pit toilet, 1 for shared or public pit toilet, 0 for no facility;

*Source of lighting:* 2 for electricity, 1 for kerosene or gas or oil, 0 for other source of lighting;

*Main fuel for cooking:* 2 for electricity, liquid petroleum gas, or biogas, 1 for coal, charcoal, or kerosene, 0 for other fuel;

*Source of drinking water:* 2 for pipe, hand pump, or well in residence/yard/plot, 1 for public tap, hand pump, or well, 0 for other water source;

*Separate room for cooking:* 1 for yes, 0 for no;

*Ownership of house:* 2 for yes, 0 for no;

*Ownership of livestock:* 2 if owns livestock, 0 if not

*Ownership of durable goods:* 4 for a car or tractor, 3 for a moped/scooter/motorcycle, telephone, refrigerator, or colour television, 2 for a bicycle, electric fan, radio/transistor, sewing machine, black and white television, water pump, bullock cart, or thresher, 1 for a mattress, pressure cooker, chair, cot/bed, table, or clock/watch.

The sum of the score is taken as SLI for each household.

## Health Index

Due to non-availability of data on health indicators viz., life expectancy and infant mortality rate at disaggregated levels, we have used the composite coverage index (CCI) as a proxy to health index.

In respect of Health component, an aggregate index relating to coverage of maternal and child health care services are considered. The variables included in calculation of Comprehensive Coverage Index (CCI) of health services to mother & child are:

- a) Percentage of pregnant women taken Full ANC (H1); Full ANC (H1) includes at least 3 antenatal care visits by a pregnant woman, at least one TT injection and consumption of atleast 90 and above IFA tablets.
- b) Percentage of deliveries conducted by skilled health personnel (H2);
- c) Percentage of new-born breastfed within one hour after delivery (H3);
- d) Percentage of children taken Measles vaccine (H4), 3 doses of DPT (H5) and BCG vaccine (H6);
- e) Percentage of women accessed post-natal care within 2 weeks after delivery by a health personnel at an institution or at home (H7).

The CCI is calculated as follows:

$$CCI = ((H1+H2)/2 + (H4+2 \times H5+H6)/4+H3+H7)/4$$

## Education Index

Mean years of schooling for all the members of the household aged 5 years and above is taken for constructing education index.

The goal posts considered for all the above indicators are listed below		
Indicator	Maximum	Minimum
Comprehensive Coverage Index	95	8
Standard of Living Index	40	6
Mean Years of Schooling	12	0

The HDI is constructed by following the approach as given in A2.0

## A2.2 Human Development Index for Gender

The methodology for computing Human Development Index for male and female is same as the one adopted for constructing HDI for all. District level gender-wise human development indices are calculated for two time periods i.e. 2004-05 and 2011-12. The indicators for three dimensions of human development - standard of living, healthy life and education- are detailed below

### Standard of Living Index

Per Capita Gross District Domestic Product (PCGDDP) is taken as a proxy of standard of living index. In order to obtain male and female incomes separately, wage ratio (female wage/male wage) and their respective shares in total population have been applied. The data from Statistical Abstracts of 2004 and 2011 have been used for this purpose. Given female / male wage ratio (r) population shares of male ( $S_m$ ) and female ( $S_w$ ) and PCGDDP (Y), the female income is given by

$$Y_w = (Y / S_m + r.S_w)$$

### Health Index

District-wise infant mortality rates for boys and girls for the period 2001 are available in a study by Irudayarajan et.al (2008). The girl/boy ratios of IMR for all the districts are computed using this data. By applying the rate of change in boys/girls ratio of IMR observed for Telangana between 2001 and 2012, the district-wise girls/boys IMR ratios of 2004 and 2011 are derived. These ratios are used along with proportion of girls and boys to arrive at gender-wise IMRs. The estimates for both boys and girls at the State level (Telangana State) are arrived at by taking the weighted average of IMR and population (less than one year).

### Education Index

The educational attainment index includes the variables such as literacy rate with one-third weight and mean years of education with two-thirds weight. Literacy rates (7years + population) are drawn from Primary Census Abstracts for the year 2001 and 2011. Mean years of education is adjusted for out of school children in the age group of 6-17 years. The data for these two indicators are drawn from 61st and 68th Rounds of NSSO on Employment and Unemployment Surveys pertaining to the periods 2004-05 and 2011-12 respectively.

The goal posts considered for all the above indicators are listed below		
Indicator	Maximum	Minimum
Standard of Living Index-Male and Female Per Capita GDDP (Rs)	150000	7000
Health Index -Infant Survival Rate	990	900
Education Index-Literacy	100	0
Education Index-Mean Years of Schooling	10	0

The male and female indices are calculated for each dimension following the method described in A2.0..

## Chapter 3 Appendix

The relationship between HDI and PCGDDP/PCGSDP has been estimated for Telangana and All India respectively for 2004-05 (period 1) and 2011-12 (period 2) and presented below:

Telangana State

$$\text{Ln (HDI)} = -8.16 + 0.692 \text{ Ln (PCGDDP)}$$

$$\text{Ln (HDI)} = -3.19 + 0.236 \text{ Ln (PCGDDP)}$$

The relationship between Health Index and PCGDDP has been estimated for 2004-05 (period 1) and 2011-12 (period 2) and presented below:

$$\text{Ln (HI)} = -9.03 + 0.796 \text{ Ln (PCGDDP)}$$

$$\text{Ln (HI)} = -3.39 + 0.272 \text{ Ln (PCGDDP)}$$

The relationship between Education Index and PCGDDP has been estimated for 2004-05 (period 1) and 2011-12 (period 2) and presented below:

$$\text{Ln (EI)} = -6.88 + 0.576 \text{ Ln (PCGDDP)}$$

$$\text{Ln (EI)} = -3.18 + 0.233 \text{ Ln (PCGDDP)}$$

All India

$$\text{Ln (HDI)} = -4.87 + 0.379 \text{ Ln (PCGSDP)}$$

$$\text{Ln (HDI)} = -3.26 + 0.238 \text{ Ln (PCGSDP)}$$

The relationship between Health Index and PCGSDP has been estimated for 2004-05 (period 1) and 2011-12 (period 2) and presented below:

$$\text{Ln (HI)} = 10.86 + 1.364 \text{ Ln (PCGSDP)}$$

$$\text{Ln (HI)} = 10.86 + 0.676 \text{ Ln (PCGSDP)}$$

The relationship between Education Index and PCGSDP has been estimated for 2004-05 (period 1) and 2011-12 (period 2) and presented below:

$$\text{Ln (EI)} = 11.37 + 1.306 \text{ Ln (PCGSDP)}$$

$$\text{Ln (EI)} = 11.59 + 1.517 \text{ Ln (PCGSDP)}$$



## A4. Development Expenditure: Data Source

The functional classification of government expenditure of any state includes General Services, Social Services and Economic Services of which the latter two are considered in this study. The major heads of *Social Services* consist of (i) Education, Sports, Art and Culture, (ii) Medical and Public Health, Family Welfare, (iii) Water Supply and Sanitation, Housing, Urban Development, (iv) Welfare of SCs, STs and BCs, (v) Labour and Labour Welfare, (vi) Social Security and Welfare, (vii) Nutrition, (viii) Relief on Natural Calamities and (ix) Other Social Services. Similarly *Economic Services* consist of (i) Agriculture and Allied Activities, (ii) Rural Development, (iii) Irrigation and Flood Control, (iv) Energy, (v) Industry and Minerals (vi) Transport, (vii) Science, Technology and Environment and (viii) General Economic Services. The focus is mainly on education and medical and public health. But then again, Social and Economic Services are taken separately for the inter-district analysis.

### Data Source

The source of data for district-wise government expenditure is <https://treasury.ap.gov.in> a website of Directorate of Treasuries and Accounts i.e., AP Cyber Treasury. This source provides every head of expenditure with detailed breakup (major, minor, sub-minor head, grant or sub-head wise) across revenue, capital and loan accounts for each district of the state for about a period of decade i.e., since 2002-03 till 2013-14.

Major Head wise expenditure under revenue and capital account for each district of Telangana is taken for this study. The analysis is confined to only 9 districts of Telangana State. Hyderabad district has been excluded mainly because of the following reasons:

- Treasury data shown against Hyderabad Public Accounts Office (PAO) relates not only to Hyderabad district but also for other districts of combined Andhra Pradesh.
- Segregation of this expenditure between Telangana State and Andhra Pradesh in the ratio of 42:58, though done, the shares of the districts of Telangana cannot be segregated. As a result, the expenditure against Hyderabad PAO, if considered, will be an over estimation.
- For the above reasons, expenditure so derived cannot be linked to HDI of Hyderabad for assessing either to (in)adequacy of funds or (in)efficiency of their utilization.

To this extent it is an underestimation of expenditure across all the districts. Despite this limitation, data has been used as the relative position of the districts remain the same. This enables to interface the patterns of expenditure with human development across districts. The data on GDDP are drawn from Statistical Abstracts published by the Directorate of Economics and Statistics, Governments of Andhra Pradesh/Telangana. The per capita real expenditure at 2004-05 prices is estimated by using DDP deflator.

## A5: Education Infrastructure Index

Education infrastructure index is constructed by taking physical as well as human resources data available for schools. The data for computing infrastructure index are taken from <http://udise.in/drc.htm>. The district-wise infrastructure index is computed for two time periods i.e. 2004-05 and 2011-12. This is in line with the time periods used for constructing district-wise human development index. Physical and human resources indicators considered for constructing education infrastructure index are given as under.

Sl.no.	Physical Infrastructure
1	Density of schools per 10 sq.km
2	Density of schools per 1000 children
3	Percentage of schools with drinking water facility
4	Percentage of schools with separate girls' toilet
5	Student-class room ratio
6	Percentage of single class room schools
	<b>Human Resources</b>
7	Percentage of single teacher schools
8	Pupil-teacher ratio
9	Percentage of female teachers

All the districts are assigned scores for each indicator based on their performance in comparison with the ten districts' average. If the performance of the district is above the average, 2 points are given and 1 point otherwise. It may be noted that the nature of the indicator i.e. development or distress is taken into consideration while assigning the status of the district as better or worst. For example, the indicator-percentage of schools with drinking water or girls' toilets - is considered as development indicator and if the performance of the district is above the average, it is to be marked as better performance. But indicators such as the percentage of schools with single class room or single teacher are taken as distress related. If the performance of the district is above the average in this context, it is to be marked as worst performance. The sum of the scores for all the nine indicators is used to arrive at infrastructure index. The infrastructure index is constructed in the following way:

$$EII_j = (X_j - \text{Max}) / (\text{Max} - \text{Min}) \text{ where}$$

$$EII_j = \text{Education Infrastructure Index for } j^{\text{th}} \text{ district}$$

$$X_j = \text{Total Score of } j^{\text{th}} \text{ district}$$

$$\text{Max} = \text{Maximum Score}$$

$$\text{Min} = \text{Minimum Score}$$

# Chapter 6 Appendix

## A6: Health Infrastructure Index

Health infrastructure index is constructed both at public and at household levels. The public health infrastructure index is developed by taking into account the number of Sub-Centres (SCs), Primary Health Centres (PHCs), number of CHCs, and number of beds. Further, the number of SCs, PHCs, CHC having regular power supply, auxiliary mid-wife (ANMs), male health worker (MHW), and lady medical officers are also considered. District-wise public health infrastructure index is constructed for the period 2012-13. The data for constructing public health infrastructure index are obtained from District Level Household Survey (DLHS IV) pertaining to the period 2012-13. The indicators used for the construction of infrastructure index and recommended norms are given as under.

Indicators for Public Health Infrastructure	
Sl.no	Indicator
1	Average population covered by Sub Centers
2	Average population covered by PHCs
3	Average population covered by CHCs
4	Beds per lakh population in public institutions (% of Kerala achievement)
5	Beds per lakh population in all institutions
6	Percentage of Sub-Centers having regular power supply
7	Percentage of PHCs having regular power supply
8	Percentage of PHCs having new-born care services
9	Percentage of CHCs having new-born care services
10	Percentage of Sub-Centers having Auxiliary Nurse Midwife (ANM)
11	Percentage of Sub-Centers having Male Health Worker (MHW)
12	Percentage of Sub-Centers having additional Auxiliary Nurse Midwife (ANM)
13	Percentage of PHCs having Medical Officer
14	Percentage of PHCs have Lady Medical Officer

The Sub-Centre is the most peripheral and first contact point between the primary health care system and the community. PHC is the first contact point between the village community and the Medical officer. The PHCs are envisaged to provide integrated curative and preventive health care to the rural population. The norms for these two indicators are given in the guidelines provided by the Ministry of Health and Family Welfare. The number of beds in the secondary and tertiary level hospitals reveals the

performance of the district in providing health infrastructure. This indicator is compared with Kerala - one of the best states in health infrastructure in India.

The health facilities index at household level is computed by taking into account the type of dwelling and availability of drinking and sanitation facilities. The data for constructing household health facilities index are obtained from 2011 Census. The indicators used for the construction of household health infrastructure index are given as under.

Indicators for Household Health Facilities	
Sl.no	Indicator
1	Percentage of Households having roof with concrete material
2	Percentage of Households having walls with burnt bricks
3	Percentage of Households having safe drinking (Tap water) water
4	Percentage of Households do not have toilet facility
5	Percentage of Households having separate kitchen for cooking
6	Percentage of Households having clean fuel for cooking
7	Percentage of Households having water with-in premises

The procedure adopted for constructing health infrastructure is the same for both public and household health facilities indices. All the districts are assigned scores for each indicator based on their performance in comparison with the 10 districts' average. If the performance of the district is above the average, 2 points are given and 1 point otherwise. The sum of the scores for all the indicators is used to arrive at infrastructure index. The infrastructure index is constructed in the following way. Further, the direction of the indicator is taken into consideration while assigning the status as *better* or *worse*.

$HII_j = (X_j - \text{Max}) / (\text{Max} - \text{Min})$  where

$HII_j$  = Health Infrastructure Index for  $j^{\text{th}}$  district

$X_j$  = Total Score of  $j^{\text{th}}$  district

Max = Maximum Score

Min = Minimum Score

## A7: Natural Resources and Human Development

### Drinking Water / Toilet Facility within the premises of Household

The newly formed Telangana state had 10 districts. Recently, the Government of Telangana while forming 21 new districts (taking the total number of districts in the state to 31) reorganized the mandals as well. In this process, a few mandals are newly formed while in some cases certain mandals are segregated across the neighbouring districts.

Mandal-wise data for 'Drinking Water Facility within the premises of Household' and 'Toilet Facility within the premises of Household' have been considered initially for 10 districts from Census 2011. After the restructuring of districts and mandals, the study has rearranged the mandals under 30 districts (except Hyderabad) on the basis of the Government Orders and similarly the mandal-wise data on drinking water and sanitation. Hence the data is not discretely available for the portion of mandals that are from their origin as well as newly formed mandals. However these mandals may assume the features of the mandals of their origin.

After this process, taking each indicator (drinking water and toilet facility within the premises of the household) the mandals in each district are classified into four categories - (i) 25 percentage or below (ii) 25.1- 50 percentage (iii) 50.1-75 percentage and (iv) 75.1-100 percentage. The mandal falling in the lower range indicates higher level of its deprivation of this facility and vice versa. Thus, this will give the status of each one of the mandals where there is availability (non-availability) of drinking water or toilet facility within the premises of the household and where more attention is required to improve these two facilities which will contribute to human development.

The image of the each district map, showing the demarcation of the mandals, is taken (<http://www.manapsc.com/wp-content/uploads/2016/08/Telangana-New-Districts-Map-2016.jpg>) designed by Telangana State Remote Sensing Applications Centre (TRAC)) to depict the status of these two facilities in the mandals of each of the districts. An effort is also made to construct natural resource deprivation index and portray the same in the above mentioned maps.

### Natural Resource Deprivation Index

The natural resource deprivation index for 435 rural mandals of Telangana state has been constructed for the year 2013-14 by using three indicators-moisture index, stage of groundwater development and percentage of area under forest as below

1. Moisture Index (MI)-It is the most frequently used tool to assess the magnitude of water deficiency in dry regions of India. It shows the gap in supply of water (precipitation) in an area relative to the



demand for water under prevailing climatic conditions (potential evapotranspiration). The MI is defined as (Thornthwaite and Mather, 1955):

$$MI = \frac{P - PET}{PET} \times 100$$

Where, P = Precipitation (in millimeters)

PET = Potential evapotranspiration (in millimetres)

PET is the amount of water transfer to the atmosphere in an ideal condition of soil moisture and vegetation (Thornthwaite, 1948). Month-wise PET has been estimated by using Thornthwaite and Mather formula (Roy & Ophori, 2012):

$$PET = 1.6 \times C \times \left(10 \times \frac{T}{I}\right)^a$$

Where, T = mean monthly temperature (°C)

I = annual heat index for the 12 months in a year ( $\Sigma i$ ):

Where i is the monthly heat index:

$$i = \left(\frac{T}{5}\right)^{1.514}$$

$$a = 6.75 \times 10^{-7} \times I^3 - 7.71 \times 10^{-5} \times I^2 + 1.792 \times 10^{-2} \times I + 0.49239$$

C = correction method for each month:

$$C = \left[\frac{m}{30}\right] \times \left[\frac{d}{12}\right]$$

Where, m = number of days in the month

d = monthly mean daily duration (i.e. number of hours between sunrise and sunset, expressed as the average for the month).

The negative value of MI implies higher potential evapotranspiration than precipitation or dry/arid climate. The positive value of MI implies humid or water abundant areas. Based on MI, the areas are classified as:

Value of MI	Climatic Zone
< -66.7	Arid
-66.6 to -33.3	Semi -arid
-33.3 to 0	Dry sub-humid
0 to + 20	Moist sub-humid
+20.1 to + 99.9	Humid
100 or more	Per-humid

Thus, a mandal having lower MI value is in a comparatively high water scarce condition than a mandal having higher MI value. The range of MI value across all Telangana mandals is -72.07 to -10.69 implying that mandals having higher MI value have more water potential than the mandals have low MI value.

2. Stage of Groundwater Exploitation Mandal-wise data on stage of groundwater development is available from Central Ground Water Board (CGWB). The method adopted by it is as the percentage of annual ground water draft to net annual ground water availability:

**Net annual groundwater availability:** The total annual groundwater potential refers to the available annual recharge after allowing for natural discharge in terms of base flow and sub-surface inflow/outflow during the monsoon season. Thus, the annual groundwater potential includes the existing water withdrawal

for various purposes, natural discharge due to base flow and sub-surface inflow/outflow in the non-monsoon season and availability for future development. The net annual groundwater availability is the difference between the total annual groundwater potential and natural discharge due to base flow and sub-surface inflow/outflow in the non-monsoon season and is being calculated for command and non-command areas separately. Thus the computation of net annual groundwater availability is based on the following three step procedure:

- a) Obtaining the total annual groundwater recharge during the monsoon and non-monsoon seasons.
- b) Estimating the value of annual natural discharge.
- c) Obtaining the net annual groundwater availability by subtracting 'b' from 'a'.

**Gross groundwater draft for all uses:** The gross groundwater draft for all uses is mainly the sum of annual gross groundwater draft for irrigation, domestic needs and industries during both monsoon and non-monsoon seasons. This data has been calculated for command areas, non-command areas and poor groundwater quality areas separately. By understanding the geographical diversity and other features across all the Indian states, all states are individually estimating groundwater draft for different uses in their own geographical boundary by setting certain assumptions and norms. However, the general criterion for estimating total groundwater draft for all uses is based on three basic steps:

- a) Different types of wells which are commonly used in the ground water assessment unit are identified and unit ground water draft per well during monsoon and non-monsoon seasons for each type are estimated with certain norms.
- b) The number of wells belonging to different types as identified in 'a' above, and which are currently in actual use are then estimated.
- c) The gross ground water draft is finally estimated using the results from 'a' and 'b' above.

The stage of groundwater development as estimated for all states as on 2011 varies between 0% in Chandigarh to 172% in Punjab. Such a phenomenon is interpreted as higher the stage of development, more is the exploitation of groundwater resource.

3. Availability of forest areas: The availability of forest resources of the state is assessed in terms of percentage of area under forest. The proportion of area under forest, as per Census 2011, varies from 0-93%. Higher forest area in a mandal means more forest resource stock than a mandal having less forest area.

The moisture index has been computed from the rainfall and temperature data provided by IMD. Data on stage of groundwater development was collected from Central Ground Water Board and data for forest area was collected from Census of India, 2011.

All mandals of Telangana, on the basis of these three indicators i.e. moisture index, stage of groundwater development and proportion of forest area, are ranked in ascending order (e.g. rank 1 means mandal having more water potential, stage of groundwater development is less and more area under forest). The composite index was constructed by combining these ranks by using the Borda Rule. The mandals are again ranked in ascending order on the basis of composite index score to identify the natural resources deprived mandals (i.e. rank 1 means less natural resource deprived mandal). The bottom 25 percent ranked mandals are considered as 'Extremely Natural Resource Deprived' mandals and 25%-50% lowest rank mandals are considered as 'Highly Natural Resource Deprived' mandals and rest of the mandals are *Natural Resource Non-Deprived* mandals.

## *Appendix II*

### Chapter-wise Tables

Chapter	Table No
Chapter 2	A2.1 to A2.25
Chapter 3	A3.1 to A3.9
Chapter 4	A4.1 to A4.4
Chapter 5	A5.1 to A5.18
Chapter 6	A6.1 to A6.16
Chapter 7	A7.1 to A7.2

Table A2.1: HDI and its Rankings across Major States of India

States	HDI		Rank	
	2004-05	2011-12	2004-05	2011-12
Bihar	0.241	0.376	20	21
Chhattisgarh	0.273	0.379	18	20
Madhya Pradesh	0.268	0.388	19	19
Odisha	0.221	0.393	21	18
Uttar Pradesh	0.299	0.401	16	17
Jharkhand	0.296	0.403	17	16
Assam	0.341	0.407	14	15
Rajasthan	0.317	0.452	15	14
West Bengal	0.388	0.485	9	13
Gujarat	0.386	0.497	11	12
Karnataka	0.388	0.507	10	11
<b>Telangana</b>	<b>0.343</b>	<b>0.513</b>	<b>13</b>	<b>10</b>
Andhra Pradesh	0.378	0.513	12	9
J & K	0.432	0.522	5	8
Uttarakhand	0.406	0.536	8	7
Haryana	0.426	0.556	6	6
Maharashtra	0.419	0.559	7	5
Punjab	0.474	0.578	2	4
Himachal Pradesh	0.463	0.580	3	3
Tamil Nadu	0.450	0.591	4	2
Kerala	0.579	0.662	1	1
<b>India</b>	<b>0.361</b>	<b>0.480</b>		

Source: Computed based on the data from NSSO and SRS Bulletins

Table A2.1a: HDI and its Components across Major States of India

States	MPCE (Adjusted)		Health Index (HI)		Education Index (EI)		HDI	
	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
Andhra Pradesh	0.262	0.413	0.598	0.700	0.344	0.467	0.378	0.513
Assam	0.199	0.216	0.494	0.586	0.403	0.533	0.341	0.407
Bihar	0.103	0.200	0.580	0.704	0.233	0.377	0.241	0.376
Chhattisgarh	0.119	0.189	0.505	0.597	0.338	0.482	0.273	0.379
Gujarat	0.221	0.335	0.596	0.686	0.436	0.535	0.386	0.497
Haryana	0.292	0.422	0.601	0.692	0.440	0.589	0.426	0.556
Himachal Pradesh	0.293	0.412	0.632	0.715	0.537	0.661	0.463	0.580
J & K	0.322	0.385	0.606	0.704	0.413	0.526	0.432	0.522
Jharkhand	0.144	0.206	0.630	0.724	0.285	0.439	0.296	0.403
Karnataka	0.221	0.323	0.621	0.707	0.425	0.571	0.388	0.507
Kerala	0.341	0.447	0.853	0.861	0.669	0.752	0.579	0.662
Madhya Pradesh	0.135	0.224	0.437	0.561	0.325	0.465	0.268	0.388
Maharashtra	0.198	0.349	0.718	0.783	0.518	0.639	0.419	0.559
Orissa	0.073	0.219	0.454	0.590	0.328	0.467	0.221	0.393
Punjab	0.319	0.430	0.714	0.787	0.468	0.571	0.474	0.578
Rajasthan	0.203	0.338	0.518	0.642	0.301	0.426	0.317	0.452
Tamil Nadu	0.251	0.414	0.715	0.800	0.507	0.622	0.450	0.591
<b>Telangana</b>	<b>0.212</b>	<b>0.410</b>	<b>0.536</b>	<b>0.658</b>	<b>0.357</b>	<b>0.502</b>	<b>0.343</b>	<b>0.513</b>
Uttar Pradesh	0.174	0.240	0.501	0.644	0.307	0.417	0.299	0.401
Uttarakhand	0.226	0.362	0.631	0.700	0.468	0.606	0.406	0.536
West Bengal	0.212	0.308	0.704	0.755	0.392	0.491	0.388	0.485
<b>India</b>	<b>0.204</b>	<b>0.314</b>	<b>0.596</b>	<b>0.690</b>	<b>0.388</b>	<b>0.510</b>	<b>0.361</b>	<b>0.480</b>

Note: MPCE (Adj) Monthly Per Capita Expenditure adjusted for inequality

Source: As per Table A2.1

Table A2.2: HDI and its Rankings across Districts of Telangana

Districts	HDI		Rank	
	2004-05	2011-12	2004-05	2011-12
Hyderabad	0.631	0.764	1	1
Ranga Reddy	0.364	0.605	2	2
Warangal	0.356	0.534	3	3
Karimnagar	0.350	0.521	4	4
Khammam	0.286	0.519	7	5
Adilabad	0.289	0.508	6	6
Nalgonda	0.320	0.500	5	7
Nizamabad	0.251	0.466	10	8
Mahbubnagar	0.270	0.464	8	9
Medak	0.261	0.446	9	10
<b>Telangana</b>	<b>0.322</b>	<b>0.510</b>	--	--

Note: The figures for Telangana in table A2.1 and A2.1a do not tally with those in table A2.2 since the methodologies adopted are different

Source: Computed based on the data from NSSO and Statistical Abstracts, Government of Andhra Pradesh

Table A2.3: Components of HDI across Districts

District	MPCE (Adj)		Health Index (HI)		Education Index (EI)	
	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
<b>Top Level HDI Districts</b>						
Hyderabad	0.481	0.650	0.747	0.888	0.700	0.774
Ranga Reddy	0.268	0.553	0.505	0.733	0.357	0.546
<b>Middle Level HDI Districts</b>						
Warangal	0.284	0.470	0.408	0.665	0.390	0.487
Karimnagar	0.315	0.415	0.396	0.684	0.345	0.499
Khammam	0.198	0.435	0.347	0.597	0.341	0.537
Adilabad	0.206	0.453	0.323	0.568	0.364	0.509
Nalgonda	0.229	0.448	0.396	0.578	0.363	0.484
<b>Bottom Level HDI Districts</b>						
Nizamabad	0.131	0.357	0.372	0.568	0.324	0.500
Mahbubnagar	0.242	0.457	0.275	0.500	0.296	0.437
Medak	0.173	0.361	0.372	0.558	0.277	0.441
<b>Telangana</b>	<b>0.226</b>	<b>0.417</b>	<b>0.414</b>	<b>0.633</b>	<b>0.357</b>	<b>0.502</b>

Note: MPCE (Adj): Monthly Per Capita Expenditure adjusted for inequality

Source: As per Table A2.2



Table A2.4: Estimated HDI and its Components across Districts of Telangana State (CAGR)

District	MPCE (Adjusted)		HI		EI		HDI	
	Growth 2004-2011	Estimated 2015-16	Growth 2004-2011	Estimated 2015-16	Growth 2004-2011	Estimated 2015-16	Growth 2004-2011	Estimated 2015-16
<b>Top Level HDI Districts</b>								
Hyderabad	4.4	0.722	2.5	0.949	1.4	0.809	2.8	0.821
Ranga Reddy	10.9	0.675	5.5	0.832	6.3	0.656	7.5	0.717
<b>Middle Level HDI Districts</b>								
Warangal	7.4	0.550	7.2	0.777	3.2	0.536	6.0	0.612
Karimnagar	4.0	0.457	8.1	0.810	5.4	0.584	5.8	0.600
Khammam	11.9	0.537	8.1	0.706	6.7	0.652	8.9	0.627
Adilabad	11.9	0.559	8.4	0.675	4.9	0.588	8.4	0.605
Nalgonda	10.1	0.542	5.6	0.657	4.2	0.548	6.6	0.580
<b>Bottom Level HDI Districts</b>								
Nizamabad	15.4	0.454	6.2	0.653	6.4	0.603	9.3	0.563
Mahbubnagar	9.5	0.550	8.9	0.598	5.7	0.516	8.0	0.554
Medak	11.1	0.442	6.0	0.639	6.9	0.538	7.9	0.534
<b>Telangana</b>	<b>9.1</b>	<b>0.500</b>	<b>6.3</b>	<b>0.728</b>	<b>5.0</b>	<b>0.580</b>	<b>6.8</b>	<b>0.595</b>

Note: CAGR: Compound Annual Growth Rate

Source: As per Table A2.2

Table A2.5: Ranks of HDI and its Components across Districts

District	MPCE (Adjusted)			HI			EI			HDI(AdjMPCE)		
	2004-05	2011-12	2015-16	2004-05	2011-12	2015-16	2004-05	2011-12	2015-16	2004-05	2011-12	2015-16
<b>Top Level HDI Districts</b>												
Hyderabad	1	1	1	1	1	1	1	1	1	1	1	1
Ranga Reddy	4	2	2	2	2	2	5	2	2	2	2	2
<b>Middle Level HDI Districts</b>												
Warangal	3	3	5	3	4	4	2	7	9	3	3	4
Karimnagar	2	8	8	4	3	3	6	6	6	4	4	6
Khammam	8	7	7	8	5	5	7	3	3	7	5	3
Adilabad	7	5	3	9	7	6	3	4	5	6	6	5
Nalgonda	6	6	6	4	6	7	4	8	7	5	7	7
<b>Bottom Level HDI Districts</b>												
Nizamabad	10	10	9	6	7	8	8	5	4	10	8	8
Mahbubnagar	5	4	4	10	10	10	9	10	10	8	9	9
Medak	9	9	10	6	9	9	10	9	8	9	10	10

Source: As per Table A2.2

Table A2.6: HDI and Its Components across Social Groups in Telangana

All Areas													Growth of HDI (CAGR)	
Category	2002-04				2007-08				2012-13					
	HI	SLI	EI	HDI	HI	SLI	EI	HDI	HI	SLI	EI	HDI	2002-4 2007-8	2007-8 2012-13
<b>All Areas</b>														
All	0.478	0.260	0.313	0.339	0.623	0.276	0.328	0.383	0.750	0.500	0.486	0.567	3.15	8.13
SC	0.499	0.170	0.247	0.276	0.610	0.250	0.277	0.348	0.752	0.450	0.452	0.535	6.02	8.95
ST	0.423	0.099	0.177	0.195	0.547	0.151	0.205	0.257	0.796	0.389	0.398	0.498	7.10	14.16
BC	0.481	0.253	0.291	0.328	0.629	0.282	0.327	0.387	0.744	0.521	0.499	0.578	4.20	8.36
OC	0.477	0.379	0.431	0.427	0.695	0.390	0.489	0.510	0.742	0.631	0.600	0.655	4.54	5.14
<b>Rural</b>														
All	0.483	0.161	0.221	0.258	0.606	0.209	0.261	0.321	0.747	0.396	0.378	0.482	5.55	8.48
SC	0.514	0.102	0.191	0.215	0.592	0.214	0.245	0.314	0.725	0.378	0.373	0.467	9.91	8.26
ST	0.419	0.057	0.147	0.152	0.541	0.132	0.190	0.239	0.789	0.311	0.321	0.428	11.88	12.41
BC	0.478	0.174	0.219	0.263	0.621	0.214	0.263	0.327	0.746	0.415	0.389	0.494	5.58	8.60
OC	0.513	0.262	0.321	0.351	0.680	0.279	0.383	0.417	0.805	0.510	0.436	0.564	4.45	6.19
<b>Urban</b>														
All	0.468	0.412	0.449	0.442	0.672	0.445	0.495	0.529	0.753	0.599	0.586	0.642	4.57	3.94
SC	0.459	0.362	0.419	0.411	0.700	0.399	0.431	0.494	0.801	0.538	0.549	0.618	4.69	4.60
ST	0.444	0.284	0.309	0.339	0.487	0.383	0.373	0.411	0.808	0.548	0.545	0.623	4.96	8.65
BC	0.487	0.399	0.426	0.436	0.648	0.443	0.475	0.515	0.742	0.611	0.588	0.644	4.25	4.57
OC	0.454	0.451	0.491	0.465	0.701	0.483	0.575	0.580	0.725	0.685	0.669	0.693	5.69	3.62

Note: SLI= Standard of Living Index; SC= Scheduled Castes; ST= Scheduled Tribes; BC= Backward Castes; OC= Other Castes

Source: Computed based on the data from the DLHS II (2002-04), III (2007-08) and IV (2012-13)

Table A2.7: Gender differentials (Male/Female) in HDI across Districts

Districts	HDI-Male		HDI-Female		Gender Differential (M/F)		Rate of change in differential (CAGR)
	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	
<b>Top Level HDI Districts</b>							
Hyderabad	0.715	0.863	0.583	0.760	1.23	1.14	-1.09
Ranga Reddy	0.485	0.718	0.394	0.598	1.23	1.20	-0.36
<b>Middle Level HDI Districts</b>							
Warangal	0.420	0.576	0.315	0.495	1.33	1.16	-1.93
Karimnagar	0.440	0.631	0.305	0.530	1.44	1.19	-2.71
Khammam	0.411	0.638	0.320	0.523	1.28	1.22	-0.73
Adilabad	0.368	0.574	0.320	0.476	1.15	1.21	0.68
Nalgonda	0.418	0.580	0.309	0.493	1.35	1.18	-1.97
<b>Bottom Level HDI Districts</b>							
Nizamabad	0.358	0.542	0.298	0.497	1.20	1.09	-1.37
Mahbubnagar	0.324	0.515	0.234	0.428	1.38	1.20	-1.99
Medak	0.386	0.608	0.317	0.515	1.22	1.18	-0.44
<b>Telangana</b>	<b>0.443</b>	<b>0.655</b>	<b>0.349</b>	<b>0.563</b>	<b>1.27</b>	<b>1.16</b>	<b>-1.24</b>

Source: Computed by the authors based on the data from NSSO 61st and 68 rounds on Employment and Unemployment Surveys and Statistical Abstracts of Government of Andhra Pradesh

**Table A2.7a: Gender Differentials (Male/Female) in Components of HDI across Districts-2011-12**

Districts	Income Index		Education Index		Health Index		Gender Differentials		
	Male	Female	Male	Female	Male	Female	Income	Education	Health
<b>Top Level HDI Districts</b>									
Hyderabad	0.882	0.747	0.813	0.667	0.895	0.881	1.18	1.22	1.02
Ranga Reddy	0.833	0.675	0.622	0.421	0.715	0.752	1.23	1.48	0.95
<b>Middle Level HDI Districts</b>									
Warangal	0.565	0.429	0.528	0.410	0.641	0.691	1.32	1.29	0.93
Karimnagar	0.658	0.533	0.557	0.408	0.685	0.684	1.23	1.37	1.00
Khammam	0.668	0.553	0.659	0.426	0.588	0.606	1.21	1.55	0.97
Adilabad	0.576	0.489	0.626	0.359	0.524	0.615	1.18	1.74	0.85
Nalgonda	0.635	0.533	0.547	0.376	0.560	0.596	1.19	1.45	0.94
<b>Bottom Level HDI Districts</b>									
Nizamabad	0.537	0.499	0.576	0.396	0.517	0.621	1.08	1.45	0.83
Mahbubnagar	0.541	0.452	0.539	0.326	0.470	0.533	1.20	1.65	0.88
Medak	0.850	0.707	0.514	0.319	0.514	0.605	1.20	1.61	0.85
<b>Telangana</b>	<b>0.710</b>	<b>0.590</b>	<b>0.636</b>	<b>0.453</b>	<b>0.624</b>	<b>0.667</b>	<b>1.20</b>	<b>1.40</b>	<b>0.94</b>

Source: As per Table A2.7

**Table A2.7b: HDI and its Components among Muslims in Telangana**

Category	2002-04				2007-08				2012-13				Growth of HDI (CAGR)	
	HI	SLI	EI	HDI	HI	SLI	EI	HDI	HI	SLI	EI	HDI	2002-2008	2007-2013
<b>All Areas</b>														
State Average	0.478	0.260	0.313	0.339	0.623	0.276	0.328	0.383	0.750	0.500	0.486	0.567	3.10	8.16
Muslims	0.449	0.350	0.382	0.391	0.671	0.373	0.392	0.461	0.723	0.583	0.511	0.600	4.20	5.41
<b>Rural</b>														
State Average	0.483	0.161	0.222	0.258	0.606	0.209	0.261	0.321	0.747	0.396	0.378	0.482	5.61	8.47
Muslims	0.494	0.253	0.297	0.334	0.651	0.254	0.288	0.362	0.724	0.463	0.417	0.519	2.03	7.47
<b>Urban</b>														
State Average	0.468	0.412	0.450	0.443	0.672	0.445	0.495	0.529	0.753	0.599	0.586	0.642	4.54	3.95
Muslims	0.431	0.385	0.410	0.408	0.686	0.445	0.453	0.517	0.722	0.616	0.537	0.620	6.10	3.70

Source: Computed based on the data from the DLHS II (2002-04), III (2007-08) and IV (2012-13)

**Table A2.7c: Growth of HDI and its Components among Muslims in Telangana (CAGR)**

HDI -Components	2002-08			2007-13		
	Total	Rural	Urban	Total	Rural	Urban
Health Index	10.57	7.14	12.32	1.50	2.15	1.03
Standard of Living Index	1.60	0.10	3.69	9.34	12.76	6.72
Education Index	0.65	-0.77	2.52	5.45	7.68	3.46
Human Development Index	4.20	2.03	6.10	5.41	7.47	3.70

Source: As per Table A2.7b

**Table A2.8: HDI by Status of Employment in Rural Telangana**

Status of Employment	2007-08				2012-13				Growth of HDI (CAGR)
	HI	SLI	EI	HDI	HI	SLI	EI	HDI	
Skilled Non-agricultural Labour	0.599	0.234	0.300	0.348	0.686	0.447	0.411	0.501	7.57
Self-employed-agriculture & allied	0.532	0.173	0.253	0.286	0.751	0.370	0.393	0.478	10.82
Casual Labour-agriculture & allied	0.606	0.180	0.217	0.287	0.736	0.337	0.339	0.438	8.82
Unskilled Non-agricultural Labour	0.539	0.192	0.199	0.274	0.722	0.372	0.513	0.516	13.51
<b>All Occupations</b>	<b>0.588</b>	<b>0.192</b>	<b>0.234</b>	<b>0.298</b>	<b>0.747</b>	<b>0.396</b>	<b>0.378</b>	<b>0.482</b>	<b>10.10</b>

Source: Computed based on the data from the DLHS III (2007-08)and IV(2012-13)

**Table A2.9: HDI by Status of Employment in Urban Telangana**

Status of Employment	2007-08				2012-13				Growth of HDI (CAGR)
	HI	SLI	EI	HDI	HI	SLI	EI	HDI	
Professionals / Senior Executives	0.679	0.506	0.679	0.615	0.536	0.748	0.726	0.663	1.50
Self-employed- Trade	0.714	0.435	0.444	0.517	0.503	0.595	0.614	0.568	1.92
Skilled Workers	0.568	0.433	0.405	0.463	0.756	0.533	0.545	0.603	5.41
Unskilled Labour	0.598	0.332	0.308	0.394	0.593	0.430	0.632	0.545	6.68
Casual Labour-agriculture & allied	0.716	0.319	0.268	0.394	0.545	0.386	0.474	0.464	3.32
Casual Labour-Services	0.483	0.295	0.291	0.346	0.483	0.487	0.586	0.516	8.34
<b>All Occupations</b>	<b>0.634</b>	<b>0.396</b>	<b>0.411</b>	<b>0.469</b>	<b>0.753</b>	<b>0.599</b>	<b>0.586</b>	<b>0.642</b>	<b>6.48</b>

Source: Computed by the authors based on the data from DLHS III (2007-08)and IV(2012-13)

**Table A2.10 : Estimated HDI and its Components for Social Groups in Telangana-2015-16**

Social Group Category	Rural				Urban				Total			
	HI	SLI	EI	HDI	HI	SLI	EI	HDI	HI	SLI	EI	HDI
All	0.811	0.494	0.438	0.560	0.788	0.671	0.627	0.692	0.808	0.618	0.569	0.657
SC	0.785	0.461	0.441	0.542	0.844	0.602	0.604	0.675	0.816	0.554	0.550	0.629
ST	0.913	0.408	0.395	0.528	0.981	0.628	0.635	0.731	0.921	0.527	0.520	0.632
BC	0.801	0.521	0.455	0.575	0.783	0.691	0.640	0.702	0.795	0.648	0.591	0.673
OC	0.860	0.632	0.460	0.630	0.735	0.783	0.710	0.742	0.762	0.754	0.651	0.721

Source: Computed based on the data from DLHS III and DLHS IV

Table A2.10a: HDI Inequalities across Social Groups and their Rate of Change: Telangana (Rural + Urban)

Social Group	Inequalities across Social Groups				Rate of Change (CAGR)		
	2002-04	2007-08	2012-13	2015-16	2002-2008	2007-2013	2012-2016
<b>Comprehensive Coverage Index (Health)</b>							
OC/SC	0.96	1.14	0.99	0.93	4.49	-2.84	-2.72
OC /ST	1.13	1.27	0.93	0.83	3.03	-6.01	-5.79
OC /BC	0.99	1.10	1.00	0.96	2.74	-2.03	-1.97
<b>Standard of Living Index</b>							
OC /SC	2.23	1.56	1.40	1.36	-8.54	-2.11	-1.48
OC /ST	3.83	2.58	1.62	1.43	-9.37	-8.88	-6.08
OC /BC	1.50	1.38	1.21	1.16	-1.98	-2.62	-1.98
<b>Education Index</b>							
OC /SC	1.74	1.77	1.33	1.18	0.29	-5.54	-5.57
OC /ST	2.44	2.39	1.51	1.25	-0.51	-8.77	-8.87
OC /BC	1.48	1.50	1.20	1.10	0.24	-4.27	-4.29
<b>Human Development Index</b>							
OC /SC	1.55	1.47	1.22	1.15	-1.35	-3.53	-3.24
OC /ST	2.19	1.98	1.32	1.14	-2.43	-7.90	-6.87
OC /BC	1.30	1.32	1.13	1.07	0.31	-2.97	-2.77

Note: CAGR: Compound Annual Growth Rate; '-' indicates decline

Source: Computed based on the data in Table A.2.6 and A2.10

Table A2.10b: HDI Inequalities across Social Groups and their Rate of Change: Rural Telangana

Social Group	Inequalities across Social Groups				Rate of Change (CAGR)		
	2002-04	2007-08	2012-13	2015-16	2002-2008	2007-2013	2012-2016
<b>Comprehensive Coverage Index (Health)</b>							
OC /SC	1.00	1.15	1.11	1.10	3.56	-0.71	-0.45
OC /ST	1.22	1.26	1.02	0.94	0.81	-4.14	-4.00
OC /BC	1.07	1.10	1.08	0.72	0.69	-0.37	-18.36
<b>Standard of Living Index</b>							
OC /SC	2.57	1.30	1.35	1.37	-15.67	0.76	0.74
OC /ST	4.60	2.11	1.64	1.55	-17.70	-4.91	-2.78
OC /BC	1.51	1.30	1.23	1.07	-3.67	-1.10	-6.57
<b>Education Index</b>							
OC /SC	1.68	1.56	1.17	1.04	-1.84	-5.59	-5.72
OC /ST	2.18	2.02	1.36	1.16	-1.89	-7.61	-7.65
OC /BC	1.47	1.46	1.12	1.21	-0.17	-5.16	4.07
<b>Human Development Index</b>							
OC /SC	1.63	1.33	1.21	1.16	-4.96	-1.87	-2.09
OC /ST	2.31	1.74	1.32	1.19	-6.84	-5.38	-5.05
OC /BC	1.33	1.28	1.14	1.01	-0.95	-2.29	-5.83

Note: CAGR: Compound Annual Growth Rate; '-' indicates decline

Source: Computed based on the data in Table A.2.6 and A2.10



Table A2.10c: HDI Inequalities across Social Groups and their Rate of Change: Urban Telangana

Social Group	Inequalities across Social Groups				Rate of Change (CAGR)		
	2002-04	2007-08	2012-13	2015-16	2002-2008	2007-2013	2012-2016
<b>Comprehensive Coverage Index (Health)</b>							
OC /SC	0.99	1.00	0.91	0.87	0.31	-2.00	-1.91
OC /ST	1.02	1.44	0.90	0.75	8.93	-9.02	-8.62
OC /BC	0.93	1.08	0.98	0.94	3.79	-2.02	-1.98
<b>Standard of Living Index</b>							
OC /SC	1.25	1.21	1.27	1.30	-0.72	1.02	1.07
OC /ST	1.59	1.26	1.25	1.25	-5.60	-0.18	-0.13
OC /BC	1.13	1.09	1.12	1.13	-0.90	0.56	0.53
<b>Education Index</b>							
OC /SC	1.17	1.33	1.22	1.18	3.30	-1.80	-1.78
OC /ST	1.59	1.54	1.23	1.12	-0.75	-4.45	-4.56
OC /BC	1.15	1.21	1.14	1.11	1.23	-1.23	-1.26
<b>Human Development Index</b>							
OC /SC	1.13	1.17	1.12	1.10	0.93	-0.91	-0.99
OC /ST	1.37	1.41	1.11	1.02	0.71	-4.65	-4.47
OC /BC	1.07	1.13	1.08	1.06	1.37	-0.91	-0.89

Note: CAGR: Compound Annual Growth Rate; '-' indicates decline

Source: Computed based on the data in Table A.2.6 and A2.10

Table A2.11: Estimated Gender-wise HDI and its Components -2015-16

District	Income		HI		EI		HDI	
	Male	Female	Male	Female	Male	Female	Male	Female
<b>Top Level HDI Districts</b>								
Hyderabad	0.965	0.875	0.955	0.941	0.864	0.698	0.927	0.831
Ranga Reddy	0.951	0.769	0.822	0.843	0.722	0.524	0.826	0.698
<b>Middle Level HDI Districts</b>								
Warangal	0.617	0.497	0.763	0.793	0.557	0.498	0.640	0.581
Karimnagar	0.727	0.633	0.814	0.807	0.615	0.511	0.714	0.639
Khammam	0.716	0.632	0.703	0.709	0.830	0.540	0.747	0.623
Adilabad	0.623	0.550	0.644	0.709	0.734	0.423	0.665	0.549
Nalgonda	0.717	0.632	0.645	0.669	0.593	0.462	0.650	0.580
<b>Bottom Level HDI Districts</b>								
Nizamabad	0.596	0.598	0.614	0.694	0.674	0.505	0.627	0.594
Mahbubnagar	0.592	0.557	0.577	0.621	0.635	0.405	0.601	0.520
Medak	0.970	0.844	0.605	0.676	0.616	0.396	0.713	0.609
Telangana	0.789	0.697	0.735	0.762	0.734	0.557	0.752	0.666

Source: Computed based on the data as per Table A2.7 and A2.7a

Table A2.11a: Gender Inequalities in HDI and its Components across the districts and Rate of Change (CAGR)

Districts	HDI			Income			HI			EI		
	2004-05	2011-12	2015-16 Estimated	2004-05	2011-12	2015-16 Estimated	2004-05	2011-12	2015-16 Estimated	2004-05	2011-12	2015-16 Estimated
<b>Top Level HDI Districts</b>												
Hyderabad	1.23	1.14 (-1.09)	1.12 (-0.59)	1.54	1.18 (-3.71)	1.10 (-2.25)	1.02	1.02 (-0.06)	1.01 (-0.03)	1.18	1.22 (-0.47)	1.24 (-0.52)
Ranga Reddy	1.23	1.20 (-0.36)	1.18 (-0.48)	1.23	1.23 (0.06)	1.24 (0.07)	0.87	0.95 (-1.35)	0.98 (-0.84)	1.75	1.48 (-2.37)	1.38 (-2.30)
<b>Middle Level HDI Districts</b>												
Warangal	1.33	1.16 (-1.93)	1.10 (-1.81)	1.65	1.32 (-3.16)	1.24 (-1.95)	0.79	0.93 (-2.25)	0.96 (-1.23)	1.82	1.29 (-4.84)	1.12 (-4.59)
Karimnagar	1.44	1.19 (-2.71)	1.12 (-2.09)	1.67	1.23 (-4.19)	1.15 (-2.38)	0.96	1.00 (-0.60)	1.01 (-0.24)	1.87	1.37 (-4.38)	1.20 (-4.11)
Khammam	1.28	1.22 (-0.73)	1.20 (-0.57)	1.52	1.21 (-3.20)	1.13 (-2.12)	0.88	0.97 (-1.39)	0.99 (-0.72)	1.58	1.55 (-0.31)	1.54 (-0.21)
Adilabad	1.15	1.21 (0.68)	1.21 (-0.15)	1.35	1.18 (-1.95)	1.13 (-1.30)	0.63	0.85 (-4.49)	0.91 (-2.16)	1.79	1.74 (-0.41)	1.74 (-0.16)
<b>Bottom Level HDI Districts</b>												
Nalgonda	1.35	1.18 (1.97)	1.12 (1.61)	1.47	1.19 (2.96)	1.13 (1.62)	0.85	0.94 (1.43)	0.96 (0.86)	1.97	1.45 (4.23)	1.28 (4.09)
Nizamabad	1.20	1.09 (-1.37)	1.06 (-1.08)	1.48	1.08 (-4.46)	1.00 (-2.53)	0.65	0.83 (-3.62)	0.88 (-2.05)	1.80	1.45 (-3.03)	1.33 (-2.83)
Mahbubnagar	1.38	1.20 (-1.99)	1.16 (-1.33)	2.04	1.20 (-7.36)	1.06 (-3.88)	0.68	0.88 (-3.72)	0.93 (-1.76)	1.91	1.65 (-2.04)	1.57 (-1.75)
Medak	1.22	1.18 (-0.44)	1.17 (-0.28)	1.47	1.20 (-2.85)	1.15 (-1.49)	0.69	0.85 (-3.11)	0.89 (-1.75)	1.78	1.61 (-1.42)	1.56 (-1.17)
<b>Telangana</b>	<b>1.27</b>	<b>1.17 (-1.15)</b>	<b>1.14 (-0.93)</b>	<b>1.51</b>	<b>1.20 (-3.20)</b>	<b>1.13 (-1.87)</b>	<b>0.82</b>	<b>0.93 (-1.80)</b>	<b>0.96 (1-.04)</b>	<b>1.66</b>	<b>1.46 (-1.89)</b>	<b>1.38 (-1.81)</b>

Note: Figures in parentheses are rates of change in inequalities; '-' indicates decline

Source: Computed based on the data in Table A2.7, Table A2.7a and Table A2.11

Table A2.12 : Estimated HDI across Rural Occupational Groups in Telangana-2015-16

Status of Employment	HI	SLI	EI	HDI
Skilled Non-agricultural Labour	0.723	0.560	0.465	0.573
Self-employed-agriculture & allied	0.859	0.477	0.468	0.577
Casual Labour-agriculture & allied	0.795	0.418	0.405	0.513
Unskilled Non-agricultural Labour	0.809	0.466	0.750	0.657
<b>All</b>	<b>0.803</b>	<b>0.456</b>	<b>0.435</b>	<b>0.541</b>

Source: Computed based on the data from Table A2.8

Table A2.12a: HDI Inequalities by Occupational Groups and their Rate of Change: Rural Telangana

Occupations	Inequalities across Occupations			Rate of Change (CAGR)	
	2007-08	2012-13	2015-16	2007-2013	2012-2016
<b>Comprehensive Coverage Index (Health)</b>					
Skilled Non Agri/Self-employed Agri	1.13	0.91	0.84	-4.10	-4.01
Skilled Non Agri/Casual Lab Agri	0.99	0.93	0.91	-1.17	-1.22
Skilled Non-Agri/Unskilled Non-Agri	1.11	0.95	0.89	-3.09	-3.02
<b>Standard of Living Index</b>					
Skilled Non Agri/Self-employed Agri	1.35	1.21	1.17	-2.23	-1.42
Skilled Non Agri/Casual Lab Agri	1.30	1.33	1.34	0.40	0.50
Skilled Non-Agri/Unskilled Non-Agri	1.22	1.20	1.20	-0.28	0.00
<b>Education Index</b>					
Skilled Non Agri/Self-employed Agri	1.19	1.05	0.99	-2.48	-2.53
Skilled Non Agri/Casual Lab Agri	1.38	1.21	1.15	-2.59	-2.69
Skilled Non-Agri/Unskilled Non-Agri	1.51	0.80	0.62	-11.88	-12.03
<b>Human Development Index</b>					
Skilled Non Agri/Self-employed Agri	1.22	1.05	0.99	-2.94	-2.66
Skilled Non Agri/Casual Lab Agri	1.21	1.14	1.12	-1.16	-1.18
Skilled Non-Agri/Unskilled Non-Agri	1.27	0.97	0.87	-5.23	-5.22

Note: CAGR: Compound Annual Growth Rate; '-' indicates decline

Source: Computed based on the data in Table A.2.8 and A2.12

Table A2.13 : Estimated HDI across Urban Occupational Groups in Telangana-2015-16

Status of Employment	HI	SLI	EI	HDI
Professionals / Senior Executives	0.487	0.868	0.745	0.680
Self-employed- Trade	0.435	0.670	0.698	0.588
Skilled Workers	0.845	0.578	0.614	0.669
Unskilled Labour	0.592	0.474	0.843	0.619
Casual Labour-agriculture & allied	0.488	0.416	0.595	0.494
Casual Labour- Services	0.483	0.584	0.775	0.602
<b>All</b>	<b>0.619</b>	<b>0.583</b>	<b>0.660</b>	<b>0.610</b>

Source: Computed based on the data from Table A2.9

Table A2.13a: HDI Inequalities by Occupational Groups and their Rate of Change: Urban Telangana

Occupations	Inequalities across Occupations			Rate of Decline (CAGR)	
	2007-08	2012-13	2015-16	2007-2013	2012-2016
<b>Comprehensive Coverage Index (Health)</b>					
Professionals/Self-employed-Trade	0.95	1.07	1.12	2.30	2.50
Professionals/Skilled	1.20	0.71	0.58	-9.92	-9.84
Professionals/Unskilled	1.14	0.90	0.82	-4.46	-4.60
Professionals/Casual labour- Agriculture	0.95	0.98	1.00	0.73	0.73
Professionals/Casual labour- Services	1.41	1.11	1.01	-4.62	-4.68
<b>Standard of Living Index</b>					
Professionals/Self-employed-Trade	1.16	1.26	1.30	1.57	1.51
Professionals/Skilled	1.17	1.40	1.50	3.73	3.44
Professionals/Unskilled	1.52	1.74	1.83	2.68	2.60
Professionals/Casual labour- Agriculture	1.59	1.94	2.09	4.09	3.77
Professionals/Casual labour -Services	1.72	1.54	1.49	-2.18	-1.63
<b>Education Index</b>					
Professionals/Self-employed-Trade	1.53	1.18	1.07	-5.01	-4.99
Professionals/Skilled	1.68	1.33	1.21	-4.50	-4.56
Professionals/Unskilled	2.20	1.15	0.88	-12.22	-12.29
Professionals/Casual labour -Agriculture	2.53	1.53	1.25	-9.58	-9.58
Professionals/Casual labour -Services	2.33	1.24	0.96	-11.89	-11.91
<b>Human Development Index</b>					
Professionals/Self-employed-Trade	1.19	1.17	1.16	-0.38	-0.46
Professionals/Skilled	1.33	1.10	1.02	-3.71	-3.85
Professionals/Unskilled	1.56	1.22	1.10	-4.86	-4.97
Professionals/Casual labour -Agriculture	1.56	1.43	1.38	-1.75	-1.85
Professionals/Casual labour -Services	1.78	1.28	1.13	-6.28	-6.24

Note: CAGR: Compound Annual Growth Rate; '-' indicates decline

Source: : Computed based on the data in Table A.2.9 and A2.13

Table A2.14: Educational Status of Children across Social Groups in Telangana

Child's ethnic group or caste	Years	SC	ST	BC	OC
Children enrolled in schools (%)	2006	89.9	76	86.8	95.4
	2013	96.4	98.9	94.5	98.3
Children's attending Private Schools (%)	2006	27.5	36.8	39.1	66.1
	2013	29.6	33.7	45.8	83.5
Children's receiving extra-tuition (%)	2006	3.8	21.1	12.3	11.3
	2013	2.3	3.5	8.4	13
Average score on 3 Maths questions	2006	56.3	62.3	61.1	62.4
	2013	44.4	44.4	43.5	55.6
Average raw score in Maths test (%)	2013	33	36.5	34	46.5
Average raw score in Telugu test (%)	2013	47.7	50.6	48.2	55.9
Average annual tuition fee( Rs)	2013	2,475	3,038	5,271	7,881
Number of children (Old Cohort)	2006	89	25	159	65
	2013	137	87	326	117

Source: Galab et al., 2014

**Table A2.15: Dropouts in Telangana by Social Groups - Primary and Upper Primary level of Education (%)**

Category	Social Group	Primary		Upper Primary	
		2004-05	2009-10	2004-05	2009-10
		All	Scheduled Caste	40.5	24.5
Scheduled Tribe	66.5		41.8	73.1	58.4
All	41.9		22.2	55.3	30.9
Boys	Scheduled Caste	38.3	25.3	59.7	35.5
	Scheduled Tribe	62.2	38.7	70.3	55.3
	All	40.7	22.9	54.9	31.2
Girls	Scheduled Caste	42.6	23.6	62.3	34.6
	Scheduled Tribe	71.1	45.0	76.7	61.7
	All	43.2	21.4	55.7	30.6

Source: Computed from District Information System for Education (DISE) data

**Table A2.16: Children (Age Group of 5-14) across Social Groups who Never Attended School during 2011-12 (%)**

Social Group	Rural			Urban			All		
	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons
<b>Telangana</b>									
ST	0.0	5.7	2.3	2.0	24.9	13.9	0.3	9.2	4.1
SC	4.1	4.7	4.4	1.0	10.0	8.0	3.7	6.5	5.3
BC	0.8	1.9	1.2	0.7	0.5	0.6	0.8	1.4	1.0
OC	2.1	0.0	1.2	1.8	0.2	1.0	1.9	0.2	1.1
All	1.5	2.8	2.1	1.2	2.6	1.9	1.4	2.7	2.0
<b>India</b>									
ST	8.7	8.2	8.5	6.9	6.4	6.7	8.5	8.0	8.3
SC	8.1	9.1	8.6	5.1	6.7	5.9	7.6	8.7	8.1
BC	7.9	8.7	8.2	4.0	5.3	4.6	6.9	7.9	7.4
OC	4.6	5.9	5.2	3.4	2.7	3.1	4.2	4.7	4.4
All	7.3	8.1	7.7	4.1	4.6	4.3	6.5	7.3	6.9

Source: NSSO 68th Round on Employment and Unemployment Survey (2011-12)

**Table A2.17: Percentage of Literates in India and Telangana across Social Groups in 2001 and 2011**

Area	Caste	India						Telangana					
		Persons		Male		Female		Persons		Male		Female	
		2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
Total	Others	68.8	76.1	78.7	83.5	58.2	68.2	62.8	70.1	73.3	78.2	51.9	61.8
	SC	54.7	66.1	66.6	75.2	41.9	56.5	47.5	58.9	58.9	68.0	35.9	49.9
	ST	47.1	59.0	59.2	68.5	34.8	49.4	35.1	49.5	46.9	59.5	22.8	39.4
Rural	Others	62.5	70.7	74.3	79.9	50.1	61.1	53.2	60.2	66.0	70.6	40.4	49.9
	SC	51.2	62.8	63.7	72.6	37.8	52.6	42.4	53.9	54.4	63.6	30.3	44.4
	ST	45.0	56.9	57.4	66.8	32.4	46.9	33.4	47.1	45.2	57.2	21.1	36.9
Urban	Others	81.8	85.5	87.6	89.7	75.3	81.0	78.5	82.6	85.0	87.8	71.6	77.2
	SC	68.1	76.2	77.9	83.3	57.5	68.6	67.1	74.2	76.2	81.7	57.9	66.8
	ST	69.1	76.8	77.8	83.2	59.9	70.3	59.8	69.6	70.5	78.1	48.1	60.8

Source: Census 2001 and 2011

**Table A2.18: Regular Employed with Social Security in Bottom and Top 20 Expenditure Classes by Social Groups in 2011-12 (%)**

Social Group	Bottom 20	Top 20
<b>Rural</b>		
ST	8.8	57.7
SC	11.1	48.3
BC	6.1	25.9
OC	0.0	42.4
All	6.8	34.2
<b>Urban</b>		
ST	77.8	0.0
SC	38.1	74.4
BC	36.9	55.8
OC	37.0	64.6
All	40.3	62.2
<b>Total</b>		
ST	54.5	53.2
SC	37.1	60.6
BC	30.7	41.5
OC	35.8	61.3
All	35.5	51.9

Source: : NSSO 68<sup>th</sup> Round on Employment and Unemployment Survey (2011-12)

**Table A2.19: Share of Population by Social Groups in Bottom 20 and Top 20 Expenditure Classes: 2011-12**

Social Group	India			Telangana		
	Bottom 20 Expenditure Class	Top 20 Expenditure Class	All	Bottom 20 Expenditure Class	Top 20 Expenditure Class	All
<b>Rural</b>						
ST	19.2	6.0	11.1	16.6	8.6	12.5
SC	27.8	13.2	20.8	25.9	12.3	17.6
BC	38.8	46.5	45.0	50.4	58.8	56.7
OC	14.2	34.3	23.0	7.1	20.3	13.2
All	100.0	100.0	100.0	100.0	100.0	100.0
<b>Urban</b>						
ST	5.5	2.6	3.5	5.8	1.0	1.7
SC	23.1	6.6	14.6	16.1	5.7	10.0
BC	45.9	28.7	41.6	45.7	43.3	52.8
OC	25.5	62.0	40.3	32.4	50.0	35.4
All	100.0	100.0	100.0	100.0	100.0	100.0
<b>Total</b>						
ST	15.3	5.0	8.9	12.3	5.6	8.2
SC	26.5	11.3	19.0	21.9	9.7	14.5
BC	40.9	41.4	44.1	48.5	52.6	55.2
OC	17.4	42.2	28.0	17.3	32.2	22.1
All	100.0	100.0	100.0	100.0	100.0	100.0

Note: Expenditure classes are State and Sector specific

Source: NSSO 68<sup>th</sup> Round on Consumer Expenditure Survey (2011-12)



**Table A2.20: Work Participation Rate across Social Groups according to Usual Status (PS + SS)**

Area	Social Group	Telangana			All-India		
		1999-2000	2004-05	2011-12	1999-2000	2004-05	2011-12
Rural	ST	58.9	52.5	60.5	50.2	51.4	46.3
	SC	57.9	55.6	48.7	43.3	44.1	40.4
	BC	54.7	55.6	52.1	42.2	43.6	39.1
	OC	50.1	51.7	43.8	37.7	41.2	38.1
	All	55.2	54.7	51.5	41.9	43.9	39.9
Urban	ST	38.5	26.2	45.5	34.6	38.4	36.6
	SC	32.8	38.2	41.0	35.4	37.7	36.4
	BC	36.2	40.5	35.7	35.2	37.8	35.6
	OC	27.9	34.2	30.6	32.3	35.1	34.8
	All	32.1	38.4	34.8	33.7	36.5	35.4
Total	ST	57.8	48.2	58.4	48.5	50.2	45.2
	SC	50.7	52.5	46.2	41.8	42.8	39.5
	BC	49.7	52.6	46.0	40.6	42.3	38.1
	OC	37.3	42.7	34.6	35.8	38.9	36.8
	All	47.6	50.0	44.6	39.8	42.0	38.6

Note: (PS+SS) Principal Status +Subsidiary Status

Source: NSSO 55<sup>th</sup>, 61<sup>st</sup> and 68<sup>th</sup> Rounds on Employment and Unemployment Survey

**Table A2.21: Characteristics of Employment across Social Groups - 2011**

Social Groups	Main Workers/ Total Workers (%)			Marginal Workers Seeking additional Employment (%)			Child Labour (%)			Unemployment (%)		
	P	M	F	P	M	F	P	M	F	P	M	F
ST	81.6	86.1	72.9	53.4	58.3	50.4	7.5	6.5	8.5	4.2	4.2	4.2
SC	81.8	85.7	73.6	53.2	57.6	49.9	4.1	4.0	4.3	6.7	5.7	7.8
All	83.9	88.0	77.9	45.8	49.6	42.9	4.8	4.7	5.0	9.5	5.8	9.9

Note: Child Labour (%) in the age group of 5-14 years; Unemployment: Non-workers seeking employment/Labour force

Source: Census 2011

Table A2.22: Percentage of Poor by Social Groups in India and Telangana

Social Group	India			Telangana		
	2004-05	2011-12	Decline in Percentage Points	2004-05	2011-12	Decline in Percentage Points
<b>Rural</b>						
ST	62.0	42.9	19.1	54.1	18.0	36.1
SC	52.8	32.4	20.4	43.0	11.5	31.5
BC	41.0	24.1	16.9	30.3	6.5	23.8
OC	26.2	15.0	11.2	16.0	6.3	9.7
All	41.9	25.8	16.1	34.0	8.8	25.2
<b>Urban</b>						
ST	35.0	23.3	11.7	47.6	12.0	35.6
SC	40.0	21.6	18.4	30.0	9.0	21.0
BC	31.5	16.2	15.3	19.6	2.5	17.1
OC	15.9	7.4	8.5	17.5	3.5	14.0
All	25.8	13.7	12.1	21.1	3.7	17.4
<b>Total</b>						
ST	59.7	40.7	19.0	53.6	17.5	36.1
SC	50.2	30.0	20.2	40.6	10.8	29.8
BC	38.9	22.0	16.9	28.0	5.0	23.0
OC	22.3	11.9	10.4	16.8	4.5	12.3
All	37.8	22.3	15.5	30.7	6.7	24.0

Note: Poverty lines based on Tendulkar Methodology are used for both all-India and Telangana. For Telangana, poverty line of combined Andhra Pradesh is used.

Source: NSSO 61<sup>st</sup> and 68<sup>th</sup> Rounds on Consumer Expenditure Survey

Table A2.23: Rural Households by Type of Occupation across Social Groups -2011-12 (%)

Type of Occupation	ST	SC	OBC	Others	All
Self-employed in Agriculture	35.9	24.8	34.1	34.4	32.6
Self-employed in Non-agriculture	8.6	8.3	16.6	15.8	13.9
Regular Salaried	7.2	7.2	9.5	16.0	9.5
Casual Labour in Agriculture	44.1	41.1	28.1	10.8	30.5
Casual Labour in Non-agriculture	3.2	10.3	7.2	3.0	6.8
Others	1.0	8.4	4.5	20.0	6.6
All	100.0	100.0	100.0	100.0	100.0

Source: NSSO 68<sup>th</sup> Rounds on Employment and Unemployment Survey

Table A2.24: Sectoral Distribution of Workers in Bottom and Top 20 Expenditure Classes by Rural Social Groups - 2011-12 (%)

Social Group	Bottom 20 Percent Expenditure Class			Top 20 Percent Expenditure Class		
	Agriculture	Non-agriculture	All	Agriculture	Non-agriculture	All
<b>Rural</b>						
ST	96.0	4.0	100.0	82.2	17.8	100.0
SC	80.7	19.3	100.0	46.3	53.7	100.0
BC	63.6	36.4	100.0	64.5	35.5	100.0
Others	43.8	56.2	100.0	55.8	44.2	100.0
<b>All</b>	<b>74.9</b>	<b>25.1</b>	<b>100.0</b>	<b>62.3</b>	<b>37.7</b>	<b>100.0</b>

Source: NSSO 68<sup>th</sup> Rounds on Employment and Unemployment Survey

Table A2.25: Status of Employment in Bottom and Top 20 Expenditure Classes by Social Groups - 2011-12 (%)

Social Group	Bottom 20 Percent Expenditure Class				Top 20 Percent Expenditure Class			
	Self-employed	Regular Salaried	Wage Employed	All	Self-employed	Regular Salaried	Wage Employed	All
<b>Rural</b>								
ST	31.5	4.6	63.9	100.0	32.4	8.9	58.7	100.0
SC	37.6	1.4	61.0	100.0	42.6	31.3	26.1	100.0
BC	50.3	6.5	43.3	100.0	58.9	16.7	24.4	100.0
Others	72.9	10.5	16.6	100.0	56.9	18.2	24.9	100.0
<b>All</b>	<b>31.5</b>	<b>4.6</b>	<b>63.9</b>	<b>100.0</b>	<b>32.4</b>	<b>8.9</b>	<b>58.7</b>	<b>100.0</b>
<b>Urban</b>								
ST	15.3	84.4	0.3	100.0	0.0	100.0	0.0	100.0
SC	6.5	57.4	36.1	100.0	5.4	94.6	0.0	100.0
BC	30.2	50.1	19.7	100.0	41.3	58.4	0.3	100.0
Others	42.8	54.0	3.2	100.0	27.9	72.1	0.0	100.0
<b>All</b>	<b>15.3</b>	<b>84.4</b>	<b>0.3</b>	<b>100.0</b>	<b>0.0</b>	<b>100.0</b>	<b>0.0</b>	<b>100.0</b>
<b>Total</b>								
ST	29.9	12.3	57.8	100.0	32.2	9.5	58.3	100.0
SC	25.6	23.0	51.4	100.0	34.1	45.8	20.1	100.0
BC	43.5	21.1	35.4	100.0	54.7	26.7	18.7	100.0
Others	47.6	47.2	5.3	100.0	39.8	49.9	10.2	100.0
<b>All</b>	<b>29.9</b>	<b>12.3</b>	<b>57.8</b>	<b>100.0</b>	<b>32.2</b>	<b>9.5</b>	<b>58.3</b>	<b>100.0</b>

Note: Expenditure Classes are Social Groups and Sector-specific

Source: NSSO 68<sup>th</sup> Rounds on Employment and Unemployment Survey

Table A3.1: Sector-wise Growth of Per Capita GDDP and Improvements in HDI and its Components (2004-05 to 2011-12)

District	Sector-wise Growth of Per Capita GDDP (CAGR)				Growth of HDI and its Components (CAGR)			
	Per Capita GDDP	Per Capita GDDP-Agriculture	Per Capita GDDP-Industry	Per Capita GDDP-Services	HDI	MPCE*	Health	Education
1	2	3	4	5	6	7	8	9
<b>Top Level HDI Districts</b>								
Hyderabad	11.64	-	10.48	12.22	2.8	4.4	2.5	1.4
Ranga Reddy	10.57	0.77	11.88	11.49	7.5	10.9	5.5	6.3
<b>Middle Level HDI Districts</b>								
Warangal	6.41	2.29	6.07	8.39	6.0	7.5	7.2	3.2
Karimnagar	8.85	10.96	6.55	9.72	5.8	4.0	8.1	5.4
Khammam	6.60	2.34	6.91	8.60	8.9	11.9	8.1	6.7
Adilabad	6.09	1.82	6.20	7.72	8.4	11.9	8.4	4.9
Nalgonda	9.75	5.05	11.60	11.19	6.6	10.1	5.6	4.2
<b>Bottom Level HDI Districts</b>								
Nizamabad	8.45	11.09	3.88	9.12	9.2	15.4	6.2	6.4
Mahbubnagar	7.21	7.77	4.77	8.19	8.0	9.5	8.9	5.7
Medak	13.82	10.51	17.18	12.04	8.0	11.1	6.0	6.9
<b>Telangana</b>	<b>9.80</b>	<b>6.33</b>	<b>10.41</b>	<b>10.61</b>	<b>6.8</b>	<b>9.1</b>	<b>6.3</b>	<b>5.0</b>

Note: \* MPCE is adjusted for inequality; Source: Computed based on the data from Statistical Abstracts GoAP and Table A2.4

Table A3.2: Different Pathways of Linkage between Economic Growth and Improvement in Human Development across the Districts of Telangana State during 2004-12

Sl. No.	Districts	Economic Growth	Growth of HD	Relationship of Improvements in Human Development with				Percolation Benefits of Economic Growth	Conversion of Economic Growth into Human Development
				Economic Growth	Nature of Economic Growth				
					Growth of Agriculture	Growth of Non-agri EMP	Growth of Non-agri GDDP	Economic Growth - Growth of MPCE	Growth of MPCE - Growth of HDI
1	2	3	4	5	6	7	8	9	10
<b>Top Level HDI Districts</b>									
1	Hyderabad	11.6	2.8	✗	-	✓	✓	✗	✓
2	Ranga Reddy	10.6	7.5	✓	✗	✓	✓	✓	✓
<b>Middle Level HDI Districts</b>									
3	Warangal	6.4	6.0	✓	✓	✓	✗	✓	✓
4	Karimnagar	8.9	5.8	✓	✗	✓	✓	✓	✓
5	Khammam	6.6	8.9	✗	✗	✗	✓	✗	✓
6	Adilabad	6.1	8.4	✗	✗	✗	✓	✗	✓
7	Nalgonda	9.6	6.6	✗	✗	✓	✗	✓	✗
<b>Bottom Level HDI Districts</b>									
8	Nizamabad	8.5	9.2	✗	✓	✗	✗	✗	✓
9	Mahbubnagar	7.2	8.0	✗	✓	✓	✗	✓	✗
10	Medak	13.8	8.0	✓	✓	✓	✓	✓	✓

Note: HDI: Human Development Index; Non-agri-Emp Growth: Change in the share of non-agricultural employment in total employment (Percentage points); Non-agri-GDDP: Change in the share of non-agricultural (Industry and Services) GDDP in total GDDP (Percentage points); and MPCE: Monthly Per Capita Consumption Expenditure

✗ Not Strong/Weak linkage; ✓: Strong Linkage; Source: As per Table A3.1

Not Strong / Weak Linkage: Differential growth pace in human development and economic growth with reference to the corresponding averages of ten districts.

Strong Linkage: More or less similar growth pace (higher/lower) in human development and economic growth with reference to the corresponding averages of ten districts.

Table A3.3: Linkage between PCGDDP in 2004-05 and Human Development in 2011-12

Districts	Per Capita GDDP in 2004-05 and Human Development in 2011-12
Top Level HDI Districts	
Hyderabad	
Ranga Reddy	
Middle Level HDI Districts	
Warangal	
Karimnagar	
Khammam	
Adilabad	
Nalgonda	
Bottom Level HDI Districts	
Nizamabad	
Mahbubnagar	
Medak	

Note: Higher or lower is with reference to the 10 districts' average

Source: As per Table A3.1

Category	Description
Strong Linkage	Higher/Lower level of Per Capita GDDP and Higher/Lower level of Human Development than the average
Not Strong/ Weak Linkage	Differential Growth Pace / No Relationship between the variables considered

Table A3.4: Linkage between Economic Growth and Improvements in Human Development in Telangana (2004-12)

Districts	PCGDDP HDI	PCGDDPAg- HDI	NAG Emp- HDI	NAG GDDP- HDI	PCGDDP- MPCE	MPCE-HDI
<b>Top Level HDI Districts</b>						
Hyderabad	Higher	Higher	Higher	Higher	Higher	Higher
Ranga Reddy	Higher	Higher	Higher	Higher	Higher	Higher
<b>Middle Level HDI Districts</b>						
Warangal	Higher	Higher	Higher	Higher	Higher	Higher
Karimnagar	Higher	Higher	Higher	Higher	Higher	Higher
Khammam	Higher	Higher	Higher	Higher	Higher	Higher
Adilabad	Higher	Higher	Higher	Higher	Higher	Higher
Nalgonda	Higher	Higher	Higher	Higher	Higher	Higher
<b>Bottom Level HDI Districts</b>						
Nizamabad	Higher	Higher	Higher	Higher	Higher	Higher
Mahbubnagar	Higher	Higher	Higher	Higher	Higher	Higher
Medak	Higher	Higher	Higher	Higher	Higher	Higher

Note: HDI: Human Development Index; PCGDDP: Per Capita Gross District Domestic Product; PCGDDP-Ag: Per Capita Gross District Domestic Product from Agriculture; NAGEmp Growth: Change in the share of non-agricultural employment in total employment (Percentage points); NAGGDDP: Change in the share of per capita non-agricultural (Industry and Services); GDDP in total GDDP (Percentage points); and MPCE: Monthly Per Capita Consumption Expenditure

Category	Description
Strong Linkage	Higher/Lower Growth of the Economy/Sector-Higher/Lower Growth in Human Development Index/MPCE than the 10 districts average
Not Strong/ Weak Linkage	Differential Growth Pace / No Relationship between the variables considered

Note: Higher or lower is with reference to the 10 districts' average



Table A3.5: Linkage between Economic Growth and Improvement in Health Status in Telangana (2004-12)

Districts	PCGDDP-HI	PCGDDP-Ag-HI	NAG Emp-HI	NAG GDDP-HI	PCGDDP-MPCE	MPCE-HI
Top Level HDI Districts						
Hyderabad						
Ranga Reddy						
Middle Level HDI Districts						
Warangal						
Karimnagar						
Khammam						
Adilabad						
Nalgonda						
Bottom Level HDI Districts						
Nizamabad						
Mahbubnagar						
Medak						

Note: HI: Health Index; PCGDDP: Per Capita Gross District Domestic Product; PCGDDP-Ag: Per Capita Gross District Domestic Product from Agriculture; NAGEmp Growth: Change in the share of non-agricultural employment in total employment (Percentage points); NAGGDDP: Change in the share of per capita non-agricultural (Industry and Services) GDDP in total GDDP (Percentage points); and MPCE: Monthly Per Capita Consumption Expenditure;

Category	Description
Strong Linkage	Higher/Lower Growth of the Economy/Sector-Higher/Lower Growth in Health Index Development Index/MPCE than the 10 districts average
Not Strong/ Weak Linkage	Differential Growth Pace / No Relationship between the variables considered

Note: Higher or lower is with reference to the 10 districts average

Table A3.6: Linkage between PCGDDP in 2004-05 and Health Status in 2011-12

Districts	Per Capita GDDP in 2004-05 and Health Status in 2011-12
<b>Top Level HDI Districts</b>	
Hyderabad	
Ranga Reddy	
<b>Middle Level HDI Districts</b>	
Warangal	
Karimnagar	
Khammam	
Adilabad	
Nalgonda	
<b>Bottom Level HDI Districts</b>	
Nizamabad	
Mahbubnagar	
Medak	

Note: Per Capita GDDP: Per Capita Gross District Domestic Product

Category	Description
Strong Linkage	Higher/Lower level of Per Capita GDDP in 2004-05 and Higher/Lower level of Health Status in 2011-12 than the average
Not Strong/ Weak Linkage	Differential Growth Pace / No Relationship between the variables considered

Note: Higher or lower is with reference to the 10 districts average

Table A3.7: Different Pathways of Linkage between Economic Growth and Improvement in Health Status across the Districts of Telangana State during 2004-2012

Sl. No.	Districts	Economic Growth	Growth of HI	Relationship of Improvements in Health Status with				Percolation Benefits of Economic Growth	Conversion of Economic Growth into improvement in Health Status
				Economic Growth	Nature of Economic Growth				
					Growth of Agriculture	Growth of Non-agri. Employment	Growth of Non-agriculture GDDP	Economic Growth - Growth of MPCE	Growth of MPCE - Growth of HI
1	2	3	4	5	6	7	8	9	10
<b>Top Level HDI Districts</b>									
1	Hyderabad	11.6	2.5	✗	-	✓	✓	✗	✓
2	Ranga Reddy	10.6	5.5	✗	✓	✗	✗	✓	✗
<b>Middle Level HDI Districts</b>									
3	Warangal	6.4	7.2	✗	✗	✗	✓	✓	✗
4	Karimnagar	8.9	8.1	✗	✓	✗	✗	✓	✗
5	Khammam	6.6	8.1	✗	✗	✗	✓	✗	✓
6	Adilabad	6.1	8.4	✗	✗	✗	✓	✗	✓
7	Nalgonda	9.6	5.6	✗	✗	✓	✗	✓	✗
<b>Bottom Level HDI Districts</b>									
8	Nizamabad	8.5	6.2	✓	✗	✓	✓	✗	✗
9	Mahbubnagar	7.2	8.9	✗	✓	✓	✗	✓	✗
10	Medak	13.8	6.0	✗	✗	✗	✗	✓	✗

Note: HI: Health Index; PCGDDP-Ag: Per Capita Gross District Domestic Product from Agriculture; Non-agri-Emp Growth: Change in the share of non-agricultural employment in total employment (Percentage points); Non-agri-GDDP: Change in the share of per capita non-agricultural (Industry and Services) GDDP in total GDDP (Percentage points); and MPCE: Monthly Per Capita Consumption Expenditure;

✗: Not Strong/Weak linkage; ✓: Strong Linkage

Not Strong / Weak Linkage: Differential growth pace in human development and economic growth with reference to the corresponding averages of ten districts.

Strong Linkage: More or less similar growth pace (higher/lower) in human development and economic growth with reference to the corresponding averages of ten districts.

Table A3.8: Linkage between Economic Growth and Improvement in Education Status in Telangana (2004-12)

Districts	PCGDDP EI	PCGDDP Ag-EI	NAG Emp- EI	NAG GDDP- EI	PCGDDP- MPCE	MPCE- EI
<b>Top Level HDI Districts</b>						
Hyderabad	Higher	Higher	Higher	Higher	Higher	Higher
Ranga Reddy	Higher	Higher	Higher	Higher	Higher	Higher
<b>Middle Level HDI Districts</b>						
Warangal	Higher	Higher	Higher	Higher	Higher	Higher
Karimnagar	Higher	Higher	Higher	Higher	Higher	Higher
Khammam	Higher	Higher	Higher	Higher	Higher	Higher
Adilabad	Higher	Higher	Higher	Higher	Higher	Higher
Nalgonda	Higher	Higher	Higher	Higher	Higher	Higher
<b>Bottom Level HDI Districts</b>						
Nizamabad	Higher	Higher	Higher	Higher	Higher	Higher
Mahabubnagar	Higher	Higher	Higher	Higher	Higher	Higher
Medak	Higher	Higher	Higher	Higher	Higher	Higher

Note: EI: Education Index; PCGDDP: Per Capita Gross District Domestic Product; PCGDDP-Ag: Per Capita Gross District Domestic Product from Agriculture; NAGiEmp Growth: Change in the share of non-agricultural employment in total employment (Percentage points); NAG-GDDP: Change in the share of per capita non-agricultural (Industry and Services) GDDP in total GDDP (Percentage points); MPCE: Monthly Per Capita Consumption Expenditure;

Category	Description
Strong Linkage	Higher/Lower Growth of the Economy/Sector-Higher/Lower Growth in Education Index Development Index/MPCE than the 10 districts average
Not Strong/ Weak Linkage	Differential Growth Pace / No Relationship between the variables considered

Note: Higher or lower is with reference to the 10 districts average

Table A3.9: Different Pathways of Linkage between Economic Growth and Improvement in Education Status across the Districts of Telangana State during 2004-2012

Sl. No.	Districts	Economic Growth	Growth of EI	Relationship of Improvements in Education Status with				Percolation Benefits of Economic Growth	Conversion of Economic Growth into Improvement in Education Status
				Economic Growth	Nature of Economic Growth				
					Growth of Agriculture	Growth of Non-agri Employment	Growth of Non-agri GDDP	Economic Growth - Growth of MPCE	Growth of MPCE- Growth of EI
1	2	3	4	5	6	7	8	9	10
<b>Top Level HDI Districts</b>									
1	Hyderabad	11.6	1.4	✗	-	✓	✓	✗	✓
2	Ranga Reddy	10.6	6.3	✓	✗	✓	✓	✓	✓
<b>Middle Level HDI Districts</b>									
3	Warangal	6.4	3.2	✓	✓	✓	✗	✓	✓
4	Karimnagar	8.9	5.4	✗	✓	✗	✗	✓	✗
5	Khammam	6.6	6.7	✗	✗	✗	✓	✗	✓
6	Adilabad	6.1	4.9	✓	✓	✓	✗	✗	✗
7	Nalgonda	9.6	4.2	✗	✗	✓	✗	✓	✗
<b>Bottom Level HDI Districts</b>									
8	Nizamabad	8.5	6.4	✗	✓	✗	✗	✗	✓
9	Mahbubnagar	7.2	5.7	✗	✓	✓	✗	✓	✗
10	Medak	13.8	6.9	✓	✓	✓	✓	✓	✓

Note: EI: Education Index; Per Capita Gross District Domestic Product; PCGDDP-Ag: Per Capita Gross District Domestic Product from Agriculture; NAG-Emp Growth: Change in the share of non-agricultural employment in total employment (Percentage points); NAG-GDDP: Change in the share of per capita non-agricultural (Industry and Services) GDDP in total GDDP (Percentage points); and MPCE: Monthly Per Capita Consumption Expenditure

✗: Not Strong /Weak Linkage; ✓: Strong Linkage

Not Strong / Weak Linkage: Differential growth pace in human development and economic growth with reference to the corresponding averages of ten districts.

Strong Linkage: More or less similar growth pace (higher/lower) in human development and economic growth with reference to the corresponding averages of ten districts.

Source: As per Table A3.1

Table A4.1: Real Per Capita (2004-05 Prices) Public Expenditure on Social Services, Economic Services, Health and Education sectors (Rs.)

Districts	Per Capita Real Social Services Expenditure (Rs.)		Per Capita Real Economic Services (Rs.)		Per Capita Real Health Expenditure (Rs.)		Per Capita Real Education Expenditure (Rs.)	
	2004-07 avg	2010-13 avg	2004-07 avg	2010-13 avg	2004-07 avg	2010-13 avg	2004-07 avg	2010-13 avg
	<b>Top level HDI District</b>							
Ranga Reddy	565.93	1272.65	429.75	186.03	40.62	55.33	286.73	425.19
<b>Middle Level HDI Districts</b>								
Warangal	1226.38	2082.14	299.7	296.56	148.92	216.93	649.31	994.75
Karimnagar	860.92	1516.02	289.92	310.52	55.7	70.84	512.72	823.56
Khammam	1156.04	2089.63	337.37	409.37	69.01	95.04	588.2	960.5
Adilabad	1053.39	1774.81	350.35	342.52	69.06	137.61	589.6	907.65
Nalgonda	947.8	1766.17	273.87	349.92	56.45	73.03	566.19	929.49
<b>Bottom Level HDI Districts</b>								
Nizamabad	881.49	1455.01	304.46	307.66	54.31	69.86	539.9	868.24
Mahbubnagar	880.81	1422.12	285.66	272.76	58.11	72.2	543.38	795.69
Medak	859.05	1725.18	297.79	374.72	67.68	104.22	515.96	925.68
Average of 9 Districts	922.18	1837.4	322.94	340.49	68.45	108.28	523.88	914.98

Source: Calculated based on the treasury data <http://treasury.ap.gov.in> (accessed in May 2014) and Census 2001 and 2011

Table A4.2: Growth of Expenditure and Human Development Parameters-2004-2012 (CAGR)

Districts	Social Services	Health	Education	Economic Services	Human Development Index	Health Index	Education Index
<b>Top Level HDI District</b>							
Ranga Reddy	9.22	5.28	6.79	-13.03	7.53	5.47	6.26
<b>Middle Level HDI Districts</b>							
Warangal	9.89	6.47	7.37	-0.18	5.96	7.23	3.22
Karimnagar	10.37	4.09	8.22	1.15	5.85	8.12	5.41
Khammam	9.08	5.48	8.52	3.28	8.89	8.06	6.70
Adilabad	10.93	12.18	7.45	-0.38	8.39	8.40	4.91
Nalgonda	8.71	4.39	8.61	4.17	6.58	5.55	4.20
<b>Bottom Level HDI Districts</b>							
Nizamabad	8.31	4.29	8.24	0.17	9.24	6.23	6.39
Mahbubnagar	12.32	3.69	6.56	-0.77	8.04	8.92	5.72
Medak	10.45	7.46	10.23	3.90	7.95	5.96	6.87
Average of 9 Districts	12.18	7.95	9.74	0.89	7.52	7.00	5.48

Source: Calculated based on the data from the Table A4.1 and A2.4



**Table A4.3: Linkage between Growth in Public Expenditure, Human Development and Per Capita GDDP During 2004-05 and 2011-12**

Districts	Social Services Exp. -HDI	Health Exp.-HI	Education Exp-EI	Economic Services and Per Capita GDDP
Ranga Reddy				
Warangal				
Karimnagar				
Khammam				
Adilabad				
Nalgonda				
Nizamabad				
Mahbubnagar				
Medak				

Note: Higher/Lower is with reference to the average of 9 districts

Source: As per Table A4.2.

Category	Description
Strong Linkage	Higher /Lower Growth in Public Expenditure and Higher/Lower Growth in HDI/HI/EI/PCGDDP than the state average
Not Strong/ Weak Linkage	Differential Growth Pace / No Relationship between the variables considered

**Table A4.4: District-wise Utilisation of Public Funds in 2004-07 and Level of Achievement in HDI, Health, Education and Economic Growth in 2011-12**

Districts	Social Services Exp. -HDI	Health Exp. Health Status	Education Exp. Education Status	Economic Services Exp. Per Capita GDDP
<b>Top Level HDI District</b>				
Ranga Reddy				
<b>Middle Level HDI Districts</b>				
Warangal				
Karimnagar				
Khammam				
Adilabad				
Nalgonda				
<b>Bottom Level HDI Districts</b>				
Nizamabad				
Mahbubnagar				
Medak				

Note: Higher/Lower is with reference to the average of 9 districts

Colour	Description			
Efficient	<b>HDI</b> Lower Social Services Expenditure- Higher HDI	<b>Health</b> Lower Health Expenditure- Higher Health Index	<b>Education</b> Lower Education Expenditure- Higher Education Index	<b>Per Capita GDDP</b> Lower Economic Services Expenditure -Higher Per Capita GDDP
Adequate	Higher Social Services Expenditure- Higher HDI	Higher Health Expenditure- Higher Health Index	Higher Education Expenditure- Higher Education Index	Higher Economic Services Expenditure -Higher Per Capita GDDP
Inefficient	Higher Social Services Expenditure- Lower HDI	Higher Health Expenditure- Lower Health Index	Higher Education Expenditure- Lower Education Index	Higher Economic Services Expenditure -Lower Per Capita GDDP
Inadequate	Lower Social Services Expenditure- Lower HDI	Lower Health Expenditure- Lower Health Index	Lower Education Expenditure- Lower Education Index	Lower Economic Services Expenditure -Lower Per Capita GDDP

Table A5.1 Education Infrastructure at Primary Level										
District/Indicators*	Period	1	2	3	4	5	6	7	8	9
<b>Top Level HDI Districts</b>										
Hyderabad	2011-12	88.62	5.33	23.60	100.00	90.01	29.98	6.08	84.55	5.46
	2004-05	30.23	1.59	28.31	83.05	71.66	33.20	2.33	83.00	5.47
Ranga Reddy	2011-12	4.67	7.32	22.14	92.32	56.26	26.49	5.60	68.62	10.88
	2004-05	2.84	4.68	27.27	78.89	44.55	30.80	3.43	65.38	13.41
<b>Middle Level HDI Districts</b>										
Warangal	2011-12	3.08	12.86	20.89	82.55	68.05	19.98	8.80	41.98	23.21
	2004-05	2.26	7.72	30.71	62.23	27.78	25.05	5.33	34.39	25.55
Karimnagar	2011-12	3.06	11.97	19.71	93.69	85.43	21.13	6.83	47.03	13.61
	2004-05	2.23	7.08	30.76	75.22	40.36	25.47	4.07	37.18	10.63
Khammam	2011-12	2.67	14.44	21.22	91.35	80.59	20.18	9.90	45.72	32.15
	2004-05	1.79	9.62	34.21	75.30	18.98	24.87	6.19	39.42	33.31
Adilabad	2011-12	2.63	15.98	24.33	82.87	54.92	20.81	10.09	39.48	32.59
	2004-05	2.41	11.87	35.06	59.65	27.48	23.91	15.71	30.19	34.79
Nalgonda	2011-12	2.53	11.54	21.58	77.40	80.53	25.17	6.42	40.98	18.63
	2004-05	2.02	7.55	35.36	66.05	31.35	28.00	1.90	35.85	19.10
<b>Bottom Level HDI Districts</b>										
Nizamabad	2011-12	3.09	10.33	22.54	89.62	86.12	21.93	4.40	50.09	19.17
	2004-05	2.44	6.93	33.01	68.79	38.55	26.10	6.57	37.93	13.57
Mahbubnagar	2011-12	2.23	9.39	25.70	83.52	63.14	23.26	10.36	46.15	24.79
	2004-05	1.79	6.76	40.18	55.81	30.21	28.57	2.24	37.28	22.19
Medak	2011-12	3.05	10.04	23.42	81.96	70.77	23.09	6.76	49.43	18.07
	2004-05	2.51	7.15	37.64	64.93	43.26	30.56	4.80	35.39	19.91
Districts' Average	2011-12	11.56	10.92	22.51	87.73	73.58	23.20	7.52	51.40	19.86
	2004-05	5.05	7.09	33.25	68.99	37.42	27.65	5.26	43.60	19.79

Note: ■ indicates better performance and ■ indicates worst performance than the district's average; \* See the description below

■ =2 points; ■ =1 point

Source: Computed based on DISE data 2004-05 and 2011-12

List of Indicators for table A5.1	
Sl.no.	Indicator
1	Density of Schools per 10 Sq.Km
2	Density of Schools per 1000 Children (6-10 years)
3	Student Class Room Ratio
4	Percentage of Schools with Drinking Water
5	Percentage of Schools with Girls' Toilet
6	Pupil Teacher Ratio
7	Percentage of Single Teacher Schools
8	Percentage of Female Teachers
9	Percentage of Single Class Room Schools

Table A5.2 Education Infrastructure at Upper Primary Level

District/Indicators*	Period	1	2	3	4	5	6	7	8	9
<b>Top Level HDI Districts</b>										
Hyderabad	2011-12	68.20	9.85	16.44	100.00	94.82	18.42	0.81	75.12	0.54
	2004-05	12.44	1.61	19.63	88.29	82.06	19.20	0.19	74.61	0.06
Ranga Reddy	2011-12	2.89	11.04	17.80	99.54	68.67	18.65	0.18	58.72	0.55
	2004-05	1.03	4.37	20.07	87.49	69.96	19.61	0.11	60.15	0.51
<b>Middle Level HDI Districts</b>										
Warangal	2011-12	1.48	12.82	18.02	95.48	86.68	14.75	0.05	33.17	1.74
	2004-05	0.80	6.95	23.77	85.38	66.56	19.15	0.10	30.19	2.91
Karimnagar	2011-12	1.80	14.64	18.99	98.12	91.23	15.21	1.64	34.10	2.06
	2004-05	0.93	7.24	24.84	90.74	67.82	19.69	0.00	29.84	1.04
Khammam	2011-12	0.99	12.01	19.76	99.70	87.18	15.17	0.15	40.18	1.21
	2004-05	0.65	8.93	32.55	88.82	45.70	22.29	0.00	37.91	3.71
Adilabad	2011-12	0.93	12.89	22.80	95.75	79.93	16.37	0.27	32.60	1.86
	2004-05	0.82	10.68	30.59	87.66	57.86	20.15	0.00	26.16	2.81
Nalgonda	2011-12	1.20	12.33	19.37	94.11	92.02	17.15	0.06	32.15	0.70
	2004-05	0.65	6.11	31.62	85.31	60.22	21.09	0.00	29.31	1.38
<b>Bottom Level HDI Districts</b>										
Nizamabad	2011-12	1.65	12.44	20.36	95.36	92.14	15.34	0.08	38.52	0.99
	2004-05	1.01	7.40	26.63	84.42	55.68	19.80	0.15	30.87	1.29
Mahbubnagar	2011-12	1.03	10.63	23.29	92.16	74.81	16.79	0.21	37.41	0.89
	2004-05	0.64	6.63	33.03	75.86	52.17	22.32	0.04	33.13	0.63
Medak	2011-12	1.52	11.48	21.11	93.84	82.30	16.50	0.27	39.40	1.29
	2004-05	1.05	7.88	31.23	78.92	60.70	23.66	0.57	31.78	1.46
Districts' Average	2011-12	8.17	12.01	19.79	96.66	84.98	16.43	0.37	42.14	1.18
	2004-05	2.00	6.78	27.40	85.29	61.87	20.70	0.12	38.40	1.58

Note: ■ indicates better performance and ■ indicates worst performance than the district's average; See the description below\*

■ =2 points; ■ =1 point

Source: As per Table A5.1

#### List of Indicators for table A5.2

Sl.no.	Indicator
1	Density of Schools per 10 Sq.Km
2	Density of Schools per 1000 Children (11-12 years)
3	Student Class Room Ratio
4	Percentage of Schools with Drinking Water
5	Percentage of Schools with Girls' Toilet
6	Pupil Teacher Ratio
7	Percentage of Single Teacher Schools
8	Percentage of Female Teachers
9	Percentage of Single Class Room Schools

Table A5.3 Education Infrastructure at Secondary Level

District/Indicators*	Period	1	2	3	4	5	6	7	8	9
<b>Top Level HDI Districts</b>										
Hyderabad	2011-12	52.58	5.27	15.90	100.00	96.09	17.24	0.44	73.93	0.44
	2004-05	8.43	0.77	17.88	91.65	86.48	19.92	0.10	73.05	0.00
Ranga Reddy	2011-12	1.95	5.15	17.08	97.39	67.30	17.32	0.27	56.94	0.48
	2004-05	0.55	1.72	17.51	87.87	75.34	18.67	0.20	60.69	0.30
<b>Middle Level HDI Districts</b>										
Warangal	2011-12	0.93	5.33	18.10	95.48	86.31	13.71	0.00	31.36	1.84
	2004-05	0.39	2.37	18.65	87.11	73.22	16.00	0.10	29.43	0.90
Karimnagar	2011-12	1.11	5.81	19.39	97.49	89.77	13.70	1.44	30.80	2.66
	2004-05	0.49	2.66	22.10	89.69	73.82	17.37	0.00	27.12	0.70
Khammam	2011-12	0.53	4.27	19.77	99.57	87.85	13.91	0.14	38.71	1.00
	2004-05	0.24	2.30	28.97	88.22	56.39	21.29	0.00	38.50	0.80
Adilabad	2011-12	0.50	4.75	23.77	96.06	79.99	14.68	0.49	27.86	2.34
	2004-05	0.35	3.42	26.14	88.14	60.47	17.78	0.00	23.88	1.10
Nalgonda	2011-12	0.81	5.33	19.67	93.62	91.50	15.19	0.00	29.51	0.78
	2004-05	0.38	2.51	29.16	84.80	65.64	18.19	0.00	26.18	1.80
<b>Bottom Level HDI Districts</b>										
Nizamabad	2011-12	0.95	4.86	21.90	95.90	91.22	14.20	0.13	34.58	0.92
	2004-05	0.51	2.77	23.75	82.96	52.28	17.21	0.00	30.67	1.50
Mahbubnagar	2011-12	0.55	3.97	22.06	92.87	74.84	13.91	0.10	34.30	1.29
	2004-05	0.26	2.10	25.77	78.18	60.26	16.86	0.10	29.01	0.40
Medak	2011-12	0.84	4.36	21.64	94.99	83.72	14.71	0.00	36.79	0.73
	2004-05	0.44	2.47	24.75	79.81	60.89	20.00	0.80	30.83	0.20
Districts' Average	2011-12	6.08	4.91	19.93	96.44	84.86	14.86	0.30	39.48	1.25
	2004-05	1.20	2.31	23.47	85.84	66.48	18.33	0.13	36.94	0.77

Note: ■ indicates better performance and ■ indicates worst performance than the district's average; See the description below\*

■ =2 points; ■ =1 point

Source: As per Table A5.1

#### List of Indicators for table A5.3

Sl.no.	Indicator
1	Density of Schools per 10 Sq.Km
2	Density of Schools per 1000 Children (13-15 years)
3	Student Class Room Ratio
4	Percentage of Schools with Drinking Water
5	Percentage of Schools with Girls' Toilet
6	Pupil Teacher Ratio
7	Percentage of Single Teacher Schools
8	Percentage of Female Teachers
9	Percentage of Single Class Room Schools

Table A5.4 Education Infrastructure at All Schools Level

District/Indicators*	Period	1	2	3	4	5	6	7	8	9
<b>Top Level HDI Districts</b>										
Hyderabad	2011-12	209.40	6.24	18.88	100.0	93.1	21.89	2.95	77.90	2.60
	2004-05	51.11	1.35	22.37	86.73	78.48	24.16	1.09	77.16	2.42
Ranga Reddy	2011-12	9.51	7.44	19.34	95.6	62.3	21.12	2.86	61.66	5.61
	2004-05	4.42	3.80	22.31	82.99	57.38	23.52	1.85	62.23	7.32
<b>Middle Level HDI Districts</b>										
Warangal	2011-12	5.49	10.37	19.25	88.2	76.2	16.46	4.95	35.95	13.80
	2004-05	3.44	6.04	25.39	72.24	45.10	20.85	3.11	31.66	15.71
Karimnagar	2011-12	5.97	10.48	19.38	95.7	88.0	16.84	4.26	37.64	8.09
	2004-05	3.66	5.81	26.68	82.12	53.78	21.48	2.22	32.13	6.21
Khammam	2011-12	4.19	10.70	20.42	94.4	83.1	16.81	6.35	41.86	20.87
	2004-05	2.68	7.40	32.62	80.09	29.65	23.24	3.97	38.67	22.39
Adilabad	2011-12	4.07	11.85	23.71	87.5	63.8	17.87	6.64	34.16	21.77
	2004-05	3.58	9.36	31.82	68.87	37.68	21.42	10.57	27.54	24.15
Nalgonda	2011-12	4.54	9.68	20.41	84.7	85.5	19.52	3.58	34.55	10.68
	2004-05	3.05	5.81	32.80	73.66	43.67	23.21	1.14	31.20	12.09
<b>Bottom Level HDI Districts</b>										
Nizamabad	2011-12	5.69	9.07	21.64	92.3	88.7	17.50	2.43	41.68	10.84
	2004-05	3.96	5.88	28.86	75.31	45.45	21.92	3.79	33.67	8.31
Mahbubnagar	2011-12	3.80	8.06	24.19	87.2	68.0	18.72	6.13	39.86	14.93
	2004-05	2.70	5.54	35.11	63.65	39.41	24.15	1.41	34.17	14.01
Medak	2011-12	5.42	8.60	22.25	87.3	76.0	18.58	3.88	42.23	10.65
	2004-05	4.01	6.03	32.84	70.62	50.25	25.95	3.04	33.04	12.39
Districts' Average	2011-12	25.81	9.25	20.95	91.49	78.47	18.53	4.40	44.75	11.98
	2004-05	8.26	5.70	29.08	75.63	48.08	22.99	3.22	40.15	12.50

Note: ■ indicates better performance and ■ indicates worst performance than the district's average; See the Description below

■ =2 points; ■ =1 point

Source: As per Table A5.1

#### List of Indicators for table A5.4

Sl.no.	Indicator
1	Density of Schools per 10 Sq.Km
2	Density of Schools per 1000 Children (6-15 years)
3	Student Class Room Ratio
4	Percentage of Schools with Drinking Water
5	Percentage of Schools with Girls' Toilet
6	Pupil Teacher Ratio
7	Percentage of Single Teacher Schools
8	Percentage of Female Teachers
9	Percentage of Single Class Room Schools



Table A5.5: Performance of Literacy Parameters- Telangana Districts (2001 & 2011)

District/Indicators*	Year	Literacy Parameters*																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>Top Level HDI Districts</b>																					
Hyderabad	2011	■	■	■												■	■	■	■	■	■
	2001	■	■	■												■	■	■	■	■	■
Ranga Reddy	2011																				■
	2001						■				■					■					■
<b>Middle Level HDI Districts</b>																					
Warangal	2011	■		■		■	■	■		■	■							■			■
	2001	■		■		■	■	■		■	■							■			■
Karimnagar	2011	■		■		■	■	■		■	■							■			■
	2001	■		■		■	■	■		■	■							■			■
Khammam	2011	■															■	■			■
	2001	■															■	■			■
Adilabad	2011	■	■	■		■		■	■	■	■				■	■	■	■	■	■	■
	2001	■	■	■		■		■	■	■	■				■	■	■	■	■	■	■
Nalgonda	2011	■						■	■	■	■							■			■
	2001	■						■	■	■	■							■			■
<b>Bottom Level HDI Districts</b>																					
Nizamabad	2011	■	■	■																	■
	2001	■	■	■																	■
Mahbubnagar	2011	■	■	■																	■
	2001	■	■	■																	■
Medak	2011	■	■	■																	■
	2001	■	■	■																	■

Note: \*Parameters descriptions are given below. ■ Not relevant ■ (better off districts) = 2 points; ■ (worst districts) = 1 point, Better-off or worst districts are in comparison to all districts average; Maximum score =46; Minimum score =20. Coefficient of Variation of literacy parameters for 2001 was 25.85 and 2011 was 27.96.

Source: Computed based on data from Census 2001 and 2011

List of Literacy Parameters

Sl.no.	Parameter		
		11	Female Literacy-ST (%)
1	% of Literates-All	12	Female-Male Gap in Literacy-ST (Percentage Points)
2	Rural Literacy (%)	13	Literacy among Younger Population (15-24 Years) (%)
3	Urban Literacy (%)	14	Literacy among Younger Population (15-24 Years)-Rural (%)
4	Rural-Urban Gap in Literacy (Percentage Points)	15	Literacy among Younger Population (15-24 Years)-Urban (%)
5	Literacy-SC (%)	16	Rural-Urban Gap in Literacy among Younger Population (15-24 Years) (Percentage Points)
6	Literacy-ST (%)	17	Adult literacy rate-All (%)
7	Female Literacy-All (%)	18	Adult literacy rate-Rural (%)
8	Female-Male Gap in Literacy-All (Percentage Points)	19	Adult literacy rate-Urban (%)
9	Female Literacy-SC (%)	20	Rural-Urban gap in Adult literacy rate (%)
10	Female-Male Gap in Literacy-SC (Percentage Points)		

Table A5.6: Status of Education Performance Parameters

Districts	1993-94									2011-12											
	School Attendance Rate			Net Enrolment Ratio			Dropout Rate			School Attendance Rate			Net Enrolment Ratio			Dropout Rate			Never Attended		
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	10	11	12
Hyderabad*	91.4	3.5		47.1	7.8		8.6	-3.5		97.4	1.4		68.8	-3.4		0.9	-0.8		1.62	-0.60	
Ranga Reddy	75.8	16.2	24.1	24.8	10.8	15.0	24.2	-16.2	-24.1	99.1	1.2	-1.1	69.7	1.8	8.0	0.5	-0.9	0.2	0.34	-0.32	0.83
Warangal	72.1	20.0	14.2	32.7	30.6	23.7	27.9	-20.0	-14.2	95.8	2.7	3.7	63.6	-14.1	0.4	3.2	-4.3	-3.6	3.06	-3.58	-3.08
Karimnagar	77.5	20.3	7.5	28.2	8.2	23.1	22.5	-20.3	-7.5	96.4	2.8	3.2	67.6	10.7	-7.1	0.6	0.8	-0.1	3.43	-5.23	0.65
Khammam	70.9	11.1	24.4	28.9	4.4	9.7	29.1	-11.1	-24.4	95.0	8.3	1.2	67.4	7.5	10.5	1.6	-3.1	-1.9	1.27	-1.77	3.75
Adilabad	66.7	10.2	17.4	21.8	16.0	19.8	33.3	-10.2	-17.4	95.4	1.0	0.7	68.3	0.1	17.1	3.3	0.9	-4.5	3.98	0.70	-1.67
Nalgonda	67.7	21.6	32.6	21.2	15.0	21.8	32.3	-21.6	-32.6	95.0	-1.7	-3.6	72.6	15.2	-10.0	1.0	1.1	5.3	0.98	-0.93	1.24
Nizamabad	67.9	16.4	20.7	17.0	12.4	34.0	32.1	-16.4	-20.7	97.7	1.1	-0.3	76.1	-9.1	2.4	1.3	-0.3	-0.9	7.34	4.11	-5.53
Mahbubnagar	44.9	20.6	37.1	15.1	-5.3	27.5	55.1	-20.6	-37.1	89.4	-0.7	8.9	59.7	-14.2	23.3	3.2	-3.4	-3.4	2.74	-0.04	4.36
Medak	72.1	3.1	17.9	31.8	6.9	-1.2	27.9	-3.1	-17.9	95.4	-3.1	-3.4	61.8	2.1	0.6	1.9	3.1	-1.0	1.03	1.61	-0.15
Average	70.7	14.3	22.3	26.9	10.7	20.0	29.3	-14.3	-22.3	95.7	1.3	1.1	67.6	-0.3	4.8	1.8	-0.7	-1.1	2.58	-0.61	-0.06

Note: \*Hyderabad has no rural component

Note:  and  indicates better or worse performance respectively compared to the districts' average

List of variables and their description is given below

Source: NSSO 50th and 68<sup>th</sup> Rounds on Employment and Unemployment

List of variables for table A5.6

Sl..No.	Description
1	School attendance rate- Percentage of Children in the age group (6-14 years) currently attending school
2	Gender gap in school attendance rate (Male-Female)
3	Rural-Urban gap in school attendance rate (Urban-Rural)
4	Net enrolment rate at secondary and higher secondary level-Percentage of children in the age group (14-17 years) attending 9th,10th,11th and 12th classes
5	Gender gap in net enrolment rate (Male-Female)
6	Rural-Urban gap in net enrolment rate (Urban-Rural)
7	Dropout rate-Percentage of children in the age group (6-14 years) currently not attending school
8	Gender gap in dropout rate (Male-Female)
9	Rural-Urban gap in dropout rate (Urban-Rural)
10	Never attended - Percentage of Children in the age group (6-14 years) never attended school
11	Gender gap in Never attended (Male-Female)
12	Rural-Urban gap in Never attended (Urban-Rural)

Table A5.7: Status of Education Performance Indicators across Social Groups in Telangana State

Indicator	Caste Group	1993-94			2011-12		
		Overall	Gender Gap	Rural-Urban Gap	Overall	Gender Gap	Rural-Urban Gap
Attendance Rate	ST	41.3	22.6	36.1	90.9	4.7	-1.0
	SC	59.4	19.3	32.1	94.4	3.4	5.7
	Others	75.6	13.5	18.2	96.5	0.1	1.3
	All	70.7	14.3	2.3	95.7	1.3	1.1
Net Enrolment Rate	ST	9.8	3.5	-4.2	61.3	-8.4	11.6
	SC	18.9	18.6	36.7	71.3	4.9	0.6
	Others	29.7	9.4	19.0	67.4	-1.1	4.0
	All	26.9	10.7	20	67.6	-0.3	4.8
Dropout Rate	ST	58.7	-22.6	-36.1	4.0	-2.0	-4.1
	SC	40.6	-19.3	-32.1	2.1	-2.9	-2.6
	Others	24.4	-13.5	-18.2	1.3	0.0	0.0
	All	29.3	-14.3	-22.3	1.8	-0.7	-1.1
Never Attended*	ST				5.15	-2.65	5.07
	SC				3.48	-0.50	-3.11
	Others				1.98	-0.16	0.67
	All				2.58	-0.61	-0.06

Note: \*not available for 1993-94

■ and ■ indicates better or worse performance of each caste group as compared to the all social groups' average respectively.

Source: As per Table A5.6

**Table A5.8 Rank Correlation Coefficients**

Parameters	Coefficients
Education Infrastructure Index (all levels) in 2004-05 and Education Index in 2011-12	0.426
Growth of Education Infrastructure Index (all levels) and Education Index during 2004-2011	-0.018

**Table A5.9 Distribution of Districts as per Education Infrastructure (all levels) in 2004-05 and Education Status in 2011-12**

Districts	Infrastructure in 2004-05 and EI in 2011-12
<b>Top Level HDI Districts</b>	
Hyderabad	
Ranga Reddy	
<b>Middle Level HDI Districts</b>	
Warangal	
Karimnagar	
Khammam	
Adilabad	
Nalgonda	
<b>Bottom Level HDI Districts</b>	
Nizamabad	
Mahbubnagar	
Medak	

Colour	Description
Efficient	Lower Infrastructure Index in 2004-05 and higher Education Index in 2011-12 than the districts' average
Adequate	Higher Infrastructure Index in 2004-05 and higher Education Index in 2011-12 than the districts' average
Inadequate	Lower Infrastructure Index in 2004-05 and Lower Education Index in 2011-12 than the districts' average
Inefficient	Higher Infrastructure Index in 2004-05 and lower Education Index in 2011-12 than the districts' average

**Table A5.10 Distribution of Districts as per Growth of Education Infrastructure (all levels) Education Status: 2004-2011**

Districts	Growth of Infrastructure and EI during 2004-2011
<b>Top Level HDI Districts</b>	
Hyderabad	
RangaReddy	
<b>Middle Level HDI Districts</b>	
Warangal	
Karimnagar	
Khammam	
Adilabad	
Nalgonda	
<b>Bottom Level HDI Districts</b>	
Nizamabad	
Mahbubnagar	
Medak	

Colour	Description
Strong Linkage	Higher Growth of Infrastructure Index and higher growth of Education Index during 2004-2011 than the districts' average
Weak Linkage	No relationship between the variables considered

**Table A5.11 Rank Correlation Coefficient**

Variables	Coefficient
Dropout Rate (I-V) in 2005-06 and Education Infrastructure at Primary level in 2011-12	-0.478

**Table A5.12 Distribution of Districts as per Dropout Rate (I-V) in 2005-06 and Education Infrastructure at Primary Level in 2011-12**

District	Dropouts and Education Infrastructure
<b>Top Level HDI Districts</b>	
Hyderabad	
Ranga Reddy	
<b>Middle Level HDI Districts</b>	
Warangal	
Karimnagar	
Khammam	
Adilabad	
Nalgonda	
<b>Bottom Level HDI Districts</b>	
Nizamabad	
Mahbubnagar	
Medak	

**Higher or lower is with reference to the districts' average**

	Higher Dropout rate and Higher Infrastructure
	Lower Dropout rate and Higher Infrastructure
	Lower Dropout rate and Lower Infrastructure
	Higher Dropout rate and Lower Infrastructure

Table A5.13 Rank Correlation Coefficients

Indicator	Coefficient
Dropout rate (I-V) in 2005-06 and Percentage of Private Schools at Primary Level in 2011-12	-.079
Education Infrastructure Index at Primary level in 2004-05 and Percentage of Private Schools at Primary Level in 2011-12	0.803**
Education Infrastructure Index in 2004-05 at Primary level and Education Status in 2011-12	0.627
Growth of Education Infrastructure Index at Primary level and Education Index-2004-2011	0.283

Note: \*\* Significant at 1 percent level;

Table A5.14: Distribution of Districts as Per Dropout Rate (I-V) in 2005-06 and Percentage of Private Schools at Primary Level in 2011-12

Districts	Dropout rate in 2005-06 and % of Private Schools in 2011-12
<b>Top Level HDI Districts</b>	
Hyderabad	
Ranga Reddy	
<b>Middle Level HDI Districts</b>	
Warangal	
Karimnagar	
Khammam	
Adilabad	
Nalgonda	
<b>Bottom Level HDI Districts</b>	
Nizamabad	
Mahbubnagar	
Medak	

Colour	Description
	Higher Dropout Rate and Higher Percentage of Private Schools
	Lower Dropout Rate and Higher Percentage of Private Schools
	Lower Dropout Rate and Lower Percentage of Private Schools
	Higher Dropout Rate and Lower Percentage of Private Schools



**Table A5.15: Distributions of Districts as per Education Infrastructure at Primary Level in 2004-05 and Percentage of Private Schools in 2011-12**

Districts	Education Infrastructure Index at Primary Level in 2004-05 and % of Private Schools in 2011-12
<b>Top Level HDI Districts</b>	
Hyderabad	Higher Education Infrastructure and Higher Percentage of Private Schools
Ranga Reddy	Higher Education Infrastructure and Higher Percentage of Private Schools
<b>Middle Level HDI Districts</b>	
Warangal	Lower Education Infrastructure and Lower Percentage of Private Schools
Karimnagar	Higher Education Infrastructure and Higher Percentage of Private Schools
Khammam	Lower Education Infrastructure and Lower Percentage of Private Schools
Adilabad	Lower Education Infrastructure and Lower Percentage of Private Schools
Nalgonda	Lower Education Infrastructure and Lower Percentage of Private Schools
<b>Bottom Level HDI Districts</b>	
Nizamabad	Higher Education Infrastructure and Lower Percentage of Private Schools
Mahbubnagar	Lower Education Infrastructure and Lower Percentage of Private Schools
Medak	Lower Education Infrastructure and Lower Percentage of Private Schools

Colour	Description
	Higher Education Infrastructure and Higher Percentage of Private Schools
	Lower Education Infrastructure and Lower Percentage of Private Schools
	Higher Education Infrastructure and Lower Percentage of Private Schools

Source: As per Table A5.1

Table A5.16: Schooling of Children 12 years Old in 2006 and 12 Year Old in 2014

Category	12 Year old (2006)					12 Year old (2014)					Sample Size	
	Children attending school (%)	Grade attending in 2007	Children attending private schools (%)	Children receiving extra-tuition (%)	Sample Size	Children attending school (%)	Grade attending in 2013-2014	Children attending private schools (%)	Children receiving extra-tuition (%)	Average spent on fees per year (Rupees)		Average spent on extra-tuition per year (Rupees)
	<b>Sex of Child</b>											
Male	92.81	6.34	36.13	13.55	167	96.1	5.94	46.22	6.76	5,614	337	385
Female	84.21	6.29	28.47	6.94	171	96.1	6.33	33.58	8.12	3,839	171	282
	<b>Child's Social Group</b>											
Scheduled Castes	88.89	6.17	15	3.75	90	96.35	6.07	23.48	2.27	2,475	145	137
Scheduled Tribes	76	6.26	21.05	21.05	25	98.85	5.63	27.91	3.49	3,038	127	87
Backward Classes	86.67	6.36	30.77	11.89	165	94.48	6.23	42.21	8.44	5,271	328	326
Other Castes	95.59	6.33	58.46	10.77	68	98.29	6.17	66.96	13.04	7,881	350	117
	<b>Maternal Education</b>											
No Education	84.74	6.24	17.54	8.53	249	94.27	5.91	26.84	3.29	2,943	91	419
Up to 5 years	96.88	6.27	38.71	12.9	32	100	6.34	43.84	9.59	4,506	181	73
6 or more years	96.97	6.52	75	14.06	66	98.86	6.45	71.68	15.61	9,400	705	175
	<b>Terciles of Wealth Index</b>											
Bottom Tercile	82.91	6.16	8.25	2.06	117	95.11	5.99	16.36	1.87	2,178	35	225
Middle Tercile	86.09	6.37	16.16	0	115	94.55	5.99	30.77	2.88	3,835	65	220
Top Tercile	95.69	6.35	66.67	26.13	116	98.65	6.32	74.43	16.89	8,465	686	222
	<b>Urban or Rural Site</b>											
Urban	95.15	6.28	72.45	30.61	103	98.62	6.3	73.95	18.14	8,712	738	218
Rural	85.31	6.31	12.92	0.48	245	94.88	6.0	24.18	1.88	2,922	29	449
Total	88.22	6.30	31.92	10.10	-	96.10	6.10	40.87	7.33	4,864	267	-
Sample Size (No. of Children)	348	306	307	307	348	667	641	641	641	641	641	667

Source: Galab et al., 2014

Table A5.17: Schooling of Children 12 years Old in 2006 and 12 Year Old in 2014

Category	12 Year old (2006)				Sample Size	12 Year old (2014)				Sample Size
	Correct answers in Maths Test (Average Raw Score)	Children who can solve correctly: "Which of these is equal to 342?" (%)	Children who can solve correctly: "Which of these is the name for 9740?" (%)	Children who can solve correctly: "A piece of rope 204 cm. long is cut into 4 equal pieces. Which of these gives the length of each piece in centimeters?" (%)		Correct answers in Maths Test (Average Raw Score)	Children who can solve correctly: "Which of these is equal to 342?" (%)	Children who can solve correctly: "Which of these is the name for 9740?" (%)	Children who can solve correctly: "A piece of rope 204 cm. long is cut into 4 equal pieces. Which of these gives the length of each piece in centimeters?" (%)	
	<b>Sex of Child</b>									
Male	67.38	70	83.13	35.63	167	37.02	50.39	69.45	21.67	385
Female	63.44	68.75	78.13	25.63	171	35.38	44.13	69.4	19.22	282
	<b>Child's Social Group</b>									
Scheduled Castes	59.17	60.71	77.38	30.95	90	33.03	47.41	65.19	20.74	137
Scheduled Tribes	67.39	78.26	82.61	26.09	25	36.54	45.98	70.11	17.24	87
Backward Classes	66.26	72.26	81.29	28.39	165	33.98	44.31	67.08	19.08	326
Other Castes	69.09	71.21	80.3	34.85	68	46.48	58.97	80.34	27.35	117
	<b>Child's Type of School</b>									
Public school	66.48	72.07	83.8	31.28	181	31.2	44.31	64.07	16.47	336
Private school	72.24	73.47	83.67	34.69	98	42.77	52.29	77.86	20.99	262
Other*	58.93	64.29	71.43	25	28	54.77	69.77	90.7	60.47	43
	<b>Maternal Education</b>									
No Education	61.73	66.67	79.22	27.71	249	29.32	38.22	58.89	16.35	419
Up to 5 years	65.81	74.19	83.87	29.03	32	39.25	49.32	79.45	17.81	73
6 or more years	76.77	78.46	81.54	40	66	51.76	69.71	90.29	32	175
	<b>Terciles of Wealth Index</b>									
Bottom Tercile	59.45	65.14	78.9	28.44	117	28.87	38.12	58.3	14.35	225
Middle Tercile	63.71	63.81	78.1	28.57	115	36.17	47.95	72.15	21.92	220
Top Tercile	71.75	78.95	83.33	33.33	116	43.97	57.21	77.93	25.68	222
	<b>Urban or Rural Site</b>									
Urban	70.1	73.27	83.17	29.7	103	44.94	60.37	80.18	28.57	218
Rural	62.86	67.84	78.85	30.4	245	32.15	41.61	64.21	16.78	449
<b>Total</b>	<b>65.09</b>	<b>69.51</b>	<b>80.18</b>	<b>30.18</b>	-	<b>36.33</b>	<b>47.74</b>	<b>69.43</b>	<b>20.63</b>	-
<b>Sample size (No. of Children)</b>	<b>328</b>	<b>328</b>	<b>328</b>	<b>328</b>	<b>348</b>	<b>664</b>	<b>664</b>	<b>664</b>	<b>664</b>	<b>667</b>

Note: \* The category "Other" includes NGO/Charity/Religious (not-for-profit), Informal or non-formal Community (e.g. mothers' cooperative), Charitable trust, Bridge school, and Mix of public and private (private aided), which altogether only represent 6.7% of children currently attending school in Round 4 and 9.1% in Round 2.

Source: Galab *et al.*, 2014

Table A5.18: Gaps across Social Groups : Type of School

Gaps	2006		2014	
	Difference of children attending school (Percentage points)	Difference of children attending private schools (Percentage points)	Difference of children attending school (Percentage points)	Difference of children attending private schools (Percentage points)
<b>Sex of Child</b>				
Male - Female	5.65	7.61	0.00	12.64
<b>Urban or rural site</b>				
Urban - Rural	9.84	59.53	3.75	49.78
<b>Maternal Education</b>				
6 or more years - No Education	15.26	82.46	5.73	63.79
<b>Child's Ethnic Group or Caste</b>				
Other Castes - Scheduled Castes	6.70	43.46	1.94	43.47
<b>Terciles of Wealth Index</b>				
Top Tercile - Bottom Tercile	12.78	58.42	3.54	58.07

Source: Galab *et al.*, 2014

Table A6.1 Distribution of hospitalized cases by type of hospital (Public and Private) 2014 (Percentage)

Type of hospital	Percentage hospitalized cases in			
	Telangana		All-India	
	Rural	Urban	Rural	Urban
Public	28.6	21.2	41.9	32.0
Private	71.4	78.8	58.1	68.0
All	100	100	100	100

Source: NSSO 71<sup>st</sup> Round on Social Consumption: Health (2014)

Table 6.2. Status of Public Health Infrastructure: 2012-13

Districts'/Indicators#	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>Top Level HDI Districts</b>														
Hyderabad*														
Ranga Reddy	6662	73266	153272	5.0	15.8	0.0	33.3	100.0	75.0	100.0	20.0	32.0	88.9	68.8
<b>Middle Level HDI Districts</b>														
Warangal	4795	44543	52695	21.1	40.2	0.0	27.6	90.0	75.0	90.9	43.2	87.5	96.7	27.6
Karimnagar	5141	42688	114634	11.3	46.5	36.4	86.4	100.0	62.5	100.0	44.0	80.0	95.5	47.6
Khammam	4506	50110	99822	12.1	49.7	11.1	73.7	100.0	91.7	100.0	20.0	92.0	100.0	36.8
Adilabad	5072	38327	94657	15.3	25.8	40.0	75.0	73.3	100.0	100.0	28.6	69.1	92.9	42.3
Nalgonda	5355	35075	83625	12.4	41.5	12.5	40.0	70.0	50.0	95.8	16.0	65.2	90.0	50.0
<b>Bottom Level HDI Districts</b>														
Nizamabad	5868	47818	104061	19.7	55.2	16.7	64.3	90.0	64.3	100.0	8.3	66.7	85.7	33.3
Mahbubnagar	5703	55099	71282	10.4	25.3	0.0	30.4	100.0	83.3	96.0	20.0	79.2	100.0	39.1
Medak	5062	58726	95908	14.9	31.6	22.2	87.0	83.3	75.0	96.0	12.0	87.5	91.3	38.1
Telengana	5290	48795	96110	17.1	44.4	17.9	57.1	90.2	76.1	97.3	25.4	73.8	93.9	40.5
Norm	1 per 5000 population	1 per 30000 population	1 per lakh population	330 beds per lakh population (achievement of Kerala)						1 per SC	1 per SC		1 per PHC	1 per PHC

\*Hyderabad has no rural segment; ■ and ■ indicates better and worse performance respectively compared to the districts' average. # List of Indicators is given below

Sl.no	Indicator	Sl.no	Indicator
1	Average population covered by Sub Centers	8	Percentage of PHCs having new-born care services
2	Average population covered by PHCs	9	Percentage of CHCs having new-born care services
3	Average population covered by CHCs	10	Percentage of Sub-centershavingAuxiliary Nurse Midwife (ANM)
4	Beds per lakh population in public institutions (% of Kerala achievement)	11	Percentage of Sub-centershavingMale Health Worker (MHW)
5	Beds per lakh population in all institutions (% of Kerala achievement)	12	Percentage of Sub-centershavingadditionalAuxiliary Nurse Midwife (ANM)
6	Percentage of Sub-centers having regular power supply	13	Percentage of PHCs having Medical Officer
7	Percentage of PHCs having regular power supply	14	Percentage of PHCs having Lady Medical Officer

Table A6.3 Status of Household Facilities: 2011

Districts/Indicators #	1	2	3	4	5	6	7	8
<b>Top Level HDI Districts</b>								
Hyderabad	67.2	59.2	97.8	1.5	88.9	67.3	92.4	96.3
Ranga Reddy	59.6	48.8	87.0	18.6	75.9	62.4	71.8	72.5
<b>Middle Level HDI Districts</b>								
Warangal	36.4	52.9	67.3	56.3	37.9	27.1	52.0	28.5
Karimnagar	31.9	51.8	69.5	53.8	38.8	35.7	64.6	30.1
Khammam	50.4	54.4	62.6	51.8	39.6	31.6	47.4	42.9
Adilabad	19.8	51.1	41.6	70.7	43.9	30.4	35.2	25.2
Nalgonda	48.2	54.6	68.4	59.4	32.1	27.1	41.1	33.1
<b>Bottom Level HDI Districts</b>								
Nizamabad	34.4	38.3	76.2	58.4	47.8	32.0	33.2	33.3
Mahbubnagar	46.9	43.7	78.0	73.6	47.5	16.2	41.7	20.9
Medak	29.9	29.1	74.1	55.9	56.6	25.1	53.3	34.2
Telangana	42.5	48.4	72.3	50.0	50.9	35.5	53.3	41.7

Note: ■ and ■ indicate better and worse performance respectively compared to the ten districts' average. # The list of indicators is given below

Source: Tables on Household Amenities, Census 2011

Sl.no	Indicator
1	Percentage of households having roof with concrete material
2	Percentage of households having walls with burnt bricks
3	Percentage of households having safe drinking (Tap water) water
4	Percentage of households which do not have toilet facility
5	Percentage of households having separate kitchen for cooking
6	Percentage of households having clean fuel for cooking
7	Percentage of households having water within premises
8	Percentage of households having flush toiletises



**Table A6.4 District-wise Indices of Health Infrastructure and Health Status**

Districts	Indices			
	Public Health Infrastructure	Household Health Facilities	Public and Household Health Facilities	Health Status 2011-12
<b>Top Level HDI Districts</b>				
Hyderabad				
Ranga Reddy	0.429	1.000	0.636	0.733
<b>Middle Level HDI Districts</b>				
Warangal	0.286	0.125	0.227	0.665
Karimnagar	0.714	0.375	0.591	0.597
Khammam	0.643	0.375	0.545	0.684
Adilabad	0.429	0.125	0.318	0.568
Nalgonda	0.143	0.250	0.182	0.578
<b>Bottom Level HDI Districts</b>				
Nizamabad	0.429	0.125	0.318	0.568
Mahbubnagar	0.429	0.250	0.364	0.500
Medak	0.429	0.375	0.409	0.558

Source: Computed based on data from DLHS IV (2012-13) and Census-2011 and as per Table A2.4

**Table A6.5 Rank Correlation Coefficients**

Indicators	Coefficient
Public Health Infrastructure Index (2012-13) and Health Status (2011-12)#	0.128
Household Health Infrastructure Index (2011) and Health Status (2011-12)#	0.400
Health Infrastructure Index (2012-13) and Health Status (2011-12) #	0.345

Note: # Hyderabad is not included

Table A6.6 Distribution of Districts as per Health Infrastructure and Health Status

Districts	Public Health Infrastructure (2012-13) and HI (2011-12)	Household Health Infrastructure (2011) and HI (2011-12)	Health Infrastructure (2012-13) and HI (2011-12)
<b>Top Level HDI Districts</b>			
Hyderabad#			
Ranga Reddy			
<b>Middle Level HDI Districts</b>			
Warangal			
Karimnagar			
Khammam			
Adilabad			
Nalgonda			
<b>Bottom Level HDI Districts</b>			
Nizamabad			
Mahbubnagar			
Medak			

Note: #Hyderabad has no rural segment

Source: as per Table A6.4

Colour	Description
	Higher Infrastructure Index and Higher Health Index than the districts' average
	Lower Health Infrastructure Index and Higher Health Index than the districts' average
	Lower Health Infrastructure Index and Lower Health Index than the districts' average
	Higher Health Infrastructure Index and Lower Health Index than the districts' average

Table A6.7 Reproductive Health Services across Districts

Districts/Indicators#	1	2	3	4	5	6	7
<b>Top Level HDI Districts</b>							
Hyderabad	78.2	39.6	6.9	44.4	98.6	59.1	84.6
Ranga Reddy	57.9	28.0	9.1	40.8	96.9	65.3	69.2
<b>Middle Level HDI Districts</b>							
Warangal	69.2	42.7	10.5	40.9	99.1	52.6	71.4
Karimnagar	84.5	48.2	14.3	52.0	99.6	46.6	82.4
Khammam	81.4	52.2	8.7	44.8	96.6	46.3	87.5
Adilabad	72.9	45.0	9.8	40.4	91.6	62.2	58.6
Nalgonda	86.7	34.7	12.2	45.6	97.8	49.1	91.7
<b>Bottom Level HDI Districts</b>							
Nizamabad	61.0	40.5	7.1	46.5	96.4	48.2	83.3
Mahbubnagar	62.0	51.5	8.2	37.7	96.8	61.5	78.6
Medak	69.4	24.8	10.6	44.3	99.1	43.3	92.3
Telangana	72.3	40.7	9.7	43.7	97.3	53.4	80.0

Note: ■ and ■ indicate better and worse performance respectively compared to the ten districts' average. #The list of indicators is given below

Sl.no	Indicator
1	Percentage of women who reported registered First ANC
2	Percentage of women who reported Full ANC
3	Percentage of Caesarean Section Deliveries conducted in public institutions
4	Percentage of Caesarean Section Deliveries conducted in private institutions
5	Percentage of deliveries attended by Skilled Personnel
6	Percentage of Mothers initiating breast-feeding within 1 hour of delivery
7	Percentage of women who received post-natal care within 2 weeks after delivery

Table A6.8 District-wise Indices of Health Infrastructure and Reproductive Health

Districts	Indices			
	Public Health Infrastructure	Household Health Facilities	Public and Household Health Facilities	Reproductive Health Index
<b>Top Level HDI Districts</b>				
Hyderabad #				
Ranga Reddy	0.429	1.000	0.636	0.429
<b>Middle Level HDI Districts</b>				
Warangal	0.286	0.125	0.227	0.429
Karimnagar	0.714	0.375	0.591	0.571
Khammam	0.643	0.375	0.545	0.571
Adilabad	0.429	0.125	0.318	0.571
Nalgonda	0.143	0.250	0.182	0.429
<b>Bottom Level HDI Districts</b>				
Nizamabad	0.429	0.125	0.318	0.286
Mahbubnagar	0.429	0.250	0.364	0.571
Medak	0.286	0.375	0.409	0.286

#Hyderabad has no rural segment; Source: as per Table A6.4 and Table A6.7

Table A6.9 Rank Correlation Coefficients

Indicators	Coefficient
Public/State Health Infrastructure Index and Reproductive Health Index	0.617
Household Health Infrastructure Index and Reproductive Health Index	0.079
Health Infrastructure Index and Reproductive Health Index	0.408

Table A6.10 Distribution of Districts as per Health Infrastructure and Reproductive Health Status-2012-13

Districts	Public Health Infrastructure and Reproductive Health Status	Household Health Facilities and Reproductive Health Status	Health Infrastructure and Reproductive Health Status
<b>Top Level HDI Districts</b>			
Hyderabad#			
Ranga Reddy			
<b>Middle Level HDI Districts</b>			
Warangal			
Karimnagar			
Khammam			
Adilabad			
Nalgonda			
<b>Bottom Level HDI Districts</b>			
Nizamabad			
Mahbubnagar			
Medak			

#Hyderabad has no rural segment

Source: as per Table A6.4

Colour	Description
	Higher Infrastructure Index and Higher Reproductive Health Index than the districts' average
	Lower Health Infrastructure Index and Higher Reproductive Health Index than the districts' average
	Lower Health Infrastructure Index and Lower Reproductive Health Index than the districts' average
	Higher Health Infrastructure Index and Lower Reproductive Health Index than the districts' average

Table A6.11: Components of Infant Mortality Rate, 2014

Region	Under five	Infant	Early neo-natal	Late neo-natal	Post neo-natal	Peri-natal	Still birth rate
<b>Telangana</b>							
Rural	41	39	23	6	10	27	5
Urban	29	28	10	7	10	14	4
All	37	35	18	6	10	22	4
<b>Andhra Pradesh</b>							
Rural	44	43	26	5	12	31	6
Urban	29	28	9	4	15	12	3
Arall	40	39	21	5	13	26	5
<b>India</b>							
Rural	51	43	23	7	13	27	4
Urban	28	26	11	4	11	15	4
All	45	39	20	6	13	24	4

Source: Statistical Report, 2014; Report No. 1 of 2016, Sample Registration System

Table A6.12: Estimates of MMR, IMR and Reproductive Health Index in Telangana Districts

Districts	Reproductive Health Index 2012-13	IMR-2013 (Per 1000 live births)	MMR-2011-13 (Per 1,00,000 live births)
<b>Top Level HDI Districts</b>			
Hyderabad	0.714	20	71
Ranga Reddy	0.429	33	78
<b>Middle Level HDI Districts</b>			
Warangal	0.429	39	78
Karimnagar	0.571	37	74
Khammam	0.571	45	99
Adilabad	0.571	48	152
Nalgonda	0.429	47	90
<b>Bottom Level HDI Districts</b>			
Nizamabad	0.286	48	79
Mahbubnagar	0.571	53	98
Medak	0.286	49	90
Districts' Average	0.486	42	91

Source: Commissionerate of Health and Family Welfare, 2015

Table A6.13 Rank Correlation Coefficients

Indicators	Coefficient
Reproductive Health Index (2012-13) and Infant Mortality Rate 2013	-0.363
Reproductive Health Index (2012-13) and Maternal Mortality Rate 2010-13	-0.048

Table A6.14. Distribution of Districts as per Reproductive Health Status, IMR and MMR

Districts	Reproductive Health Index (2012-13) and Infant Mortality Rate (2013)	Reproductive Health Index (2012-13) and Maternal Mortality Rate (2010-13)
<b>Top Level HDI Districts</b>		
Hyderabad		
Ranga Reddy		
<b>Middle Level HDI Districts</b>		
Warangal		
Karimnagar		
Khammam		
Adilabad		
Nalgonda		
<b>Bottom Level HDI Districts</b>		
Nizamabad		
Mahbubnagar		
Medak		

Colour	Description
	Higher Reproductive Health Index and Lower Mortality Rates than the districts' average
	Lower Reproductive Health Index and Lower Mortality Rates than the districts' average
	Lower Reproductive Health Index and Higher Mortality Rates than the districts' average
	Higher Reproductive Health Index and Higher Mortality Rates than the districts' average

Table A6.15: Reproductive Health Index and Child Nutrition across Districts

Districts	Reproductive Health Index (2012-13)	% of Children (under 5 years) Stunted (2012-13)
<b>Top Level HDI Districts</b>		
Hyderabad	0.714	29.4
Ranga Reddy	0.429	26.6
<b>Middle Level HDI Districts</b>		
Warangal	0.429	11.7
Karimnagar	0.571	23.0
Khammam	0.571	21.7
Adilabad	0.571	20.6
Nalgonda	0.429	18.0
<b>Bottom Level HDI Districts</b>		
Nizamabad	0.286	33.2
Mahbubnagar	0.571	33.6
Medak	0.286	20.5
<b>Districts' Average</b>	<b>0.486</b>	<b>23.8</b>



Table A6.16: Rank Correlation Coefficient

Indicators	Coefficient
Reproductive Health Index and Percentage of Children (below 5 years) Stunted-2012-13	0.292

Table A6.16a: Distribution of Districts as per Reproductive Health Index and Percentage of Children (below 5 years) Stunted-2012-13

Districts	Reproductive Health Index (2012-13) and Percentage of Children Stunted (2012-13)
<b>Top Level HDI Districts</b>	
Hyderabad	
Ranga Reddy	
<b>Middle Level HDI Districts</b>	
Warangal	
Karimnagar	
Khammam	
Adilabad	
Nalgonda	
<b>Bottom Level HDI Districts</b>	
Nizamabad	
Mahbubnagar	
Medak	

Colour	Description
	Higher Reproductive Health Index and Lower Percentage of Children below 5 years Stunted than the districts' average
	Lower Reproductive Health Index and Lower Percentage of Children below 5 years Stunted than the districts' average
	Lower Reproductive Health Index and Higher Percentage of Children below 5 years Stunted than the districts' average
	Higher Reproductive Health Index and Higher Percentage of Children below 5 years Stunted than the districts' average

**Table A7.1: Distribution of Mandals by Percentage of Households having Drinking Water and Sanitation Facilities and by Levels of Natural Resource Deprivation**

Sl. No.	New Districts	Drinking Water Within the premises					Toilet Within the premises					Natural Resource Deprivation				Total (col 3-7) / (col 8-12 / col 13-16)
		Less than 25 %	25.1-50.0%	50.1-75.0%	75.1-100%	No data	Less than 25 %	25.1-50.0%	50.1-75.0%	75.1-100%	No data	No Deprivation	Highly Deprivation	Extremely Deprivation	No data	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Adilabad	8	4	1	0	5	12	0	1	0	5	10	0	0	8	18
2	Bhadradi	3	8	6	0	6	6	4	3	4	6	17	0	0	6	23
3	Jagityal	0	0	12	4	2	5	7	4	0	2	7	2	0	9	18
4	Jangaon	0	4	7	0	2	2	8	1	0	2	0	3	4	6	13
5	Jayashankar	4	9	3	0	4	9	5	2	0	4	16	0	1	3	20
6	Jogulamba	8	1	0	0	3	8	1	0	0	3	1	4	4	3	12
7	Kamareddy	4	13	0	0	5	11	4	2	0	5	13	2	2	5	22
8	Karimnagar	0	0	11	1	4	0	10	1	1	4	4	4	4	4	16
9	Khammam	0	7	13	0	1	0	8	10	1	2	19	1	0	1	21
10	Komaram Bheem	9	3	0	0	3	11	1	0	0	3	11	0	0	4	15
11	Mahbubabad	0	8	4	0	4	6	6	0	0	4	7	4	1	4	16
12	Mahbubnagar	10	9	2	0	4	19	1	1	0	4	3	5	13	4	25
13	Mancherial	4	5	5	0	4	7	4	3	0	4	14	0	0	4	18
14	Medak	3	12	0	0	5	9	6	0	0	5	10	4	1	5	20
15	Medchal/ Malkajgiri	0	2	2	4	6	0	0	1	7	6	1	2	2	9	14
16	Nagarkurnool	2	9	5	0	4	10	6	0	0	4	2	5	9	4	20
17	Nalgonda	9	15	2	0	5	9	13	4	0	5	2	9	15	5	31
18	Nirmal	5	6	2	0	5	10	3	0	0	5	10	2	0	6	18
19	Nizamabad	0	14	5	0	8	1	14	3	1	8	13	5	0	9	27
20	Peddapalli	0	0	11	0	3	2	8	0	1	3	10	0	0	4	14
21	Rajanna	3	2	7	0	0	0	6	3	0	3	2	3	4	3	12
22	Ranga Reddy	1	7	10	3	6	2	7	5	7	6	0	8	12	7	27
23	Sangareddy	7	8	2	2	7	9	4	4	2	7	6	10	3	7	26
24	Siddipet	0	10	6	1	5	0	10	6	1	5	0	5	11	6	22
25	Suryapet	1	12	5	0	5	3	12	3	0	5	3	2	12	6	23
26	Vikarabad	7	9	1	0	1	10	7	0	0	1	11	6	0	1	18
27	Wanaparthy	3	6	1	0	5	8	1	1	0	5	2	6	2	5	15
28	Warangal-Rural	0	5	9	0	1	0	3	9	2	1	9	3	1	2	15
29	Warangal-Urban	0	0	7	0	4	0	0	4	3	4	0	4	2	5	11
30	Yadadri	4	5	6	0	2	2	8	5	0	2	1	5	8	3	17
	<b>Total mandals</b>	<b>95</b>	<b>193</b>	<b>145</b>	<b>15</b>	<b>119</b>	<b>171</b>	<b>167</b>	<b>76</b>	<b>30</b>	<b>123</b>	<b>204</b>	<b>104</b>	<b>111</b>	<b>148</b>	<b>567</b>

*No data*\*: For drinking water and toilet facility, the data is related to the 10 districts of Telangana State based on the Census 2011.

This data are distributed across newly formed 30 districts. Within the districts, there are newly formed mandals as well.

The newly formed mandals have to assume the features of the mandals of their origin.

**Table A7.1a: Distribution of Mandals by Percentage of Households having Drinking Water and Sanitation Facilities and by Levels of Natural Resource Deprivation (%)**

Sl. No.	New Districts	Mandals having Drinking Water Facility Within the premises of the Households (%)					Mandals having Toilet Facility Within the premises of the Households (%)					Natural Resource Deprivation				Total (col 3-7) / (col 8-12) / col 13-16
		Less than 25 %	25.1-50.0%	50.1-75.0%	75.1-100%	No data	Less than 25 %	25.1-50.0%	50.1-75.0%	75.1-100%	No data	Natural Resource			No data	
												No Deprivation	Highly Deprivation	Extremely Deprivation		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Adilabad	44.4	22.2	5.6	0.0	27.8	66.7	0.0	5.6	0.0	27.8	55.6	0.0	0.0	44.4	100.0
2	Bhadradi	13.0	34.8	26.1	0.0	26.1	26.1	17.4	13.0	17.4	26.1	73.9	0.0	0.0	26.1	100.0
3	Jagityal	0.0	0.0	66.7	22.2	11.1	27.8	38.9	22.2	0.0	11.1	38.9	11.1	0.0	50.0	100.0
4	Jangaon	0.0	30.8	53.8	0.0	15.4	15.4	61.5	7.7	0.0	15.4	0.0	23.1	30.8	46.2	100.0
5	Jayashankar	20.0	45.0	15.0	0.0	20.0	45.0	25.0	10.0	0.0	20.0	80.0	0.0	5.0	15.0	100.0
6	Jogulamba	66.7	8.3	0.0	0.0	25.0	66.7	8.3	0.0	0.0	25.0	8.3	33.3	33.3	25.0	100.0
7	Kamareddy	18.2	59.1	0.0	0.0	22.7	50.0	18.2	9.1	0.0	22.7	59.1	9.1	9.1	22.7	100.0
8	Karimnagar	0.0	0.0	68.8	6.3	25.0	0.0	62.5	6.3	6.3	25.0	25.0	25.0	25.0	25.0	100.0
9	Khammam	0.0	33.3	61.9	0.0	4.8	0.0	38.1	47.6	4.8	9.5	90.5	4.8	0.0	4.8	100.0
10	Komaram Bheem	60.0	20.0	0.0	0.0	20.0	73.3	6.7	0.0	0.0	20.0	73.3	0.0	0.0	26.7	100.0
11	Mahbubabad	0.0	50.0	25.0	0.0	25.0	37.5	37.5	0.0	0.0	25.0	43.8	25.0	6.3	25.0	100.0
12	Mahbubnagar	40.0	36.0	8.0	0.0	16.0	76.0	4.0	4.0	0.0	16.0	12.0	20.0	52.0	16.0	100.0
13	Mancherial	22.2	27.8	27.8	0.0	22.2	38.9	22.2	16.7	0.0	22.2	77.8	0.0	0.0	22.2	100.0
14	Medak	15.0	60.0	0.0	0.0	25.0	45.0	30.0	0.0	0.0	25.0	50.0	20.0	5.0	25.0	100.0
15	Medchal/ Malkajgiri	0.0	14.3	14.3	28.6	42.9	0.0	0.0	7.1	50.0	42.9	7.1	14.3	14.3	64.3	100.0
16	Nagarkurnool	10.0	45.0	25.0	0.0	20.0	50.0	30.0	0.0	0.0	20.0	10.0	25.0	45.0	20.0	100.0
17	Nalgonda	29.0	48.4	6.5	0.0	16.1	29.0	41.9	12.9	0.0	16.1	6.5	29.0	48.4	16.1	100.0
18	Nirmal	27.8	33.3	11.1	0.0	27.8	55.6	16.7	0.0	0.0	27.8	55.6	11.1	0.0	33.3	100.0
19	Nizamabad	0.0	51.9	18.5	0.0	29.6	3.7	51.9	11.1	3.7	29.6	48.1	18.5	0.0	33.3	100.0
20	Peddapalli	0.0	0.0	78.6	0.0	21.4	14.3	57.1	0.0	7.1	21.4	71.4	0.0	0.0	28.6	100.0
21	Rajanna	25.0	16.7	58.3	0.0	0.0	0.0	50.0	25.0	0.0	25.0	16.7	25.0	33.3	25.0	100.0
22	Ranga Reddy	3.7	25.9	37.0	11.1	22.2	7.4	25.9	18.5	25.9	22.2	0.0	29.6	44.4	25.9	100.0
23	Sangareddy	26.9	30.8	7.7	7.7	26.9	34.6	15.4	15.4	7.7	26.9	23.1	38.5	11.5	26.9	100.0
24	Siddipet	0.0	45.5	27.3	4.5	22.7	0.0	45.5	27.3	4.5	22.7	0.0	22.7	50.0	27.3	100.0
25	Suryapet	4.3	52.2	21.7	0.0	21.7	13.0	52.2	13.0	0.0	21.7	13.0	8.7	52.2	26.1	100.0
26	Vikarabad	38.9	50.0	5.6	0.0	5.6	55.6	38.9	0.0	0.0	5.6	61.1	33.3	0.0	5.6	100.0
27	Wanaparthy	20.0	40.0	6.7	0.0	33.3	53.3	6.7	6.7	0.0	33.3	13.3	40.0	13.3	33.3	100.0
28	Warangal-Rural	0.0	33.3	60.0	0.0	6.7	0.0	20.0	60.0	13.3	6.7	60.0	20.0	6.7	13.3	100.0
29	Warangal-Urban	0.0	0.0	63.6	0.0	36.4	0.0	0.0	36.4	27.3	36.4	0.0	36.4	18.2	45.5	100.0
30	Yadadri	23.5	29.4	35.3	0.0	11.8	11.8	47.1	29.4	0.0	11.8	5.9	29.4	47.1	17.6	100.0
	<b>Total mandals</b>	<b>16.8</b>	<b>34.0</b>	<b>25.6</b>	<b>2.6</b>	<b>21.0</b>	<b>30.2</b>	<b>29.5</b>	<b>13.4</b>	<b>5.3</b>	<b>21.7</b>	<b>36.0</b>	<b>18.3</b>	<b>19.6</b>	<b>26.1</b>	<b>100.0</b>

Note: No data\*: For drinking water and toilet facility, the data is related to the 10 districts of Telangana State based on the Census 2011. This data are distributed across newly formed 30 districts. Within the districts, there are newly formed mandals as well. The newly formed mandals have to assume the features of the mandals of their origin.

Table A7.2: District-Wise Percentage of Households having Drinking Water and Sanitation Facilities

S.No.	District s	Total	Water Within the premises	%	Toilet Having	%
1	Adilabad	156627	45888	29.3	37181	23.7
2	Bhadradi	277387	117321	42.3	126633	45.7
3	Jagityal	293942	197801	67.3	124733	42.4
4	Jangaon	150327	70292	46.8	55587	37.0
5	Jayashankar	182714	73275	40.1	53426	29.2
6	Jogulamba	132124	19186	14.5	25967	19.7
7	Kamareddy	222380	66090	29.7	73291	33.0
8	Karimnagar	253703	182254	71.8	138850	54.7
9	Khammam	378365	217802	57.6	218894	57.9
10	Komaram Bheem	121957	25747	21.1	23383	19.2
11	Mahabubabad	193760	84189	43.5	50538	26.1
12	Mahbubnagar	304615	102308	33.6	76856	25.2
13	Mancherial	208308	100227	48.1	77635	37.3
14	Medak	175460	56978	32.5	48583	27.7
15	Medchal/Malkajgiri	604477	503241	83.3	574605	95.1
16	Nagarkurnool	192420	79593	41.4	53673	27.9
17	Nalgonda	401529	145354	36.2	160672	40.0
18	Nirmal	164878	57824	35.1	42850	26.0
19	Nizamabad	368353	176672	48.0	192132	52.2
20	Peddapalli	212397	129749	61.1	94892	44.7
21	Rajanna	138211	86219	62.4	69973	50.6
22	Rangareddy	578144	389762	67.4	448704	77.6
23	Sangareddy	313615	136801	43.6	150404	48.0
24	Siddipet	249758	127153	50.9	123377	49.4
25	Suryapet	285568	128726	45.1	109995	38.5
26	Vikarabad	202376	62206	30.7	49409	24.4
27	Wanaparthy	134915	42608	31.6	31354	23.2
28	Warangal-Rural	198339	102472	51.7	76430	38.5
29	Warangal-Urban	254692	174269	68.4	179350	70.4
30	Yadadi	186490	71131	38.1	151297	81.1
	<b>Total 30 Districts Except Hyderabad</b>	<b>7537831</b>	<b>3773138</b>	<b>50.1</b>	<b>3640674</b>	<b>48.3</b>

# *Appendix III*

## Statistical Tables

Chapter	Table No
Chapter 2	A1 to A7
Chapter 3	A8 to A9
Chapter 4	A10 to A13
Chapter 5	A14 to A27

Table A1: State-wise Indicators of Human Development Index

States	Infant Mortality Rate		Life Expectancy at Birth (years)		Adult Literacy (Age 15 Years +) (%)		Mean Years of Schooling		% of Out of School Children (6-17 Years)		MPCE (2004-05 prices) (Rs.)		PCGSDP (2004-05 prices) (Rs.)		Gini Co-efficient		MPCE (Adj) (Rs.)	
	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
Andhra Pradesh	54	38	63.7	67.4	62.0	67.4	3.5	4.4	26.3	11.1	918.1	1197	28769	45127	0.30	0.29	646	853
Assam	68	55	59.9	63.1	63.3	72.2	3.9	5.1	16.8	9.6	734.6	787	18993	25608	0.22	0.25	576	594
Bihar	61	43	65.2	69.5	47.0	61.8	2.5	3.6	34.2	18.9	613.5	737	8773	14482	0.21	0.22	483	577
Chhattisgarh	63	47	58.6	61.1	64.7	70.3	3.2	4.4	23.2	8.2	712.8	816	21463	31405	0.30	0.31	497	565
Gujarat	54	38	63.6	66.1	69.1	78.0	4.5	5.0	22.4	11.8	852.6	1032	37803	66527	0.30	0.28	600	739
Haryana	60	42	67.0	68.0	67.9	75.6	4.3	5.7	18.3	9.3	1017.3	1267	42188	68725	0.33	0.32	683	867
Himachal Pradesh	49	36	65.0	68.0	76.5	82.8	4.8	6.1	6.2	3.7	970.0	1205	37893	60727	0.29	0.29	684	851
J & K	50	39	63.0	68.0	55.5	67.2	4.1	5.1	13.9	9.1	937.3	1112	25479	34425	0.23	0.27	722	810
Jharkhand	50	38	65.2	69.5	53.6	66.4	3.0	4.1	31.3	13.1	705.5	797	20848	30855	0.26	0.27	521	584
Karnataka	50	32	64.4	66.0	66.6	75.4	4.2	5.5	19.3	10.2	865.4	1129	30139	47124	0.31	0.36	600	723
Kerala	14	12	73.3	73.5	90.9	94.0	6.1	6.9	6.2	3.2	1164.5	1456	36278	59052	0.36	0.38	747	908
Madhya Pradesh	76	56	58.6	61.1	63.7	69.3	3.1	4.3	25.2	11.7	727.9	876	17449	26813	0.30	0.31	513	603
Maharashtra	36	25	68.3	70.5	76.9	82.3	5.1	6.1	16.5	7.8	878.7	1160	40509	69335	0.35	0.35	575	758
Orissa	75	53	59.9	62.7	63.1	72.9	3.3	4.4	29.4	14.3	642.8	826	20179	30755	0.29	0.28	457	598
Punjab	44	28	70.9	71.9	69.7	75.8	4.7	5.6	18.9	11.2	1032.4	1246	37228	53078	0.31	0.29	717	879
Rajasthan	68	49	62.5	66.0	60.4	66.1	2.9	4.0	26.1	14.9	777.4	1008	21055	32730	0.25	0.26	581	743
Tamil Nadu	37	21	68.4	70.8	73.5	80.1	4.8	5.8	11.7	6.0	949.0	1270	33999	64012	0.33	0.33	633	855
Telangana	63	43	61.6	65.2	58.0	66.5	3.5	4.8	19.0	9.5	852.3	1201	27543	52238	0.31	0.29	590	848
Uttar Pradesh	73	53	63.8	67.9	56.3	67.7	3.1	4.0	26.5	18.1	764.4	891	14621	20799	0.28	0.30	551	621
Uttarakhand	42	34	62.5	66.0	71.6	78.8	4.5	5.6	15.6	5.3	822.7	1094	27497	60706	0.26	0.29	605	777
West Bengal	38	32	67.7	70.3	68.6	76.3	3.9	4.7	24.2	15.5	851.8	1026	24869	36424	0.31	0.31	590	703
<b>India</b>	<b>58</b>	<b>42</b>	<b>65.4</b>	<b>67.9</b>	<b>67.3</b>	<b>74.0</b>	<b>3.8</b>	<b>4.9</b>	<b>23.1</b>	<b>12.9</b>	<b>826.0</b>	<b>1023</b>	<b>27056</b>	<b>43219</b>	<b>0.30</b>	<b>0.31</b>	<b>581</b>	<b>711</b>

Source: NSSO 61<sup>st</sup> and 68<sup>th</sup> Rounds on Consumer Expenditure Survey and Employment and Unemployment Survey; SRS Bulletins 2004 and 2011; National Accounts Statistics, CSO

Table A2: District-wise Indicators of Human Development Index

States	Infant Mortality Rate IMR		MPCE (Rs.) (2004-05 prices)		Gini Coefficient		MPCE (Adj) (Rs.)		Adult Literacy (15 Years +) %		Mean Years of Schooling		% of Out of School Children (6-17)	
	2004	2012	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
	Hyderabad	33	20	1451	1846	0.33	0.29	966	1316	78.8	83.3	7.4	7.9	11.4
Ranga Reddy	55	34	1007	1405	0.35	0.22	654	1103	66.2	75.9	3.5	4.8	24.7	3.0
Warangal	63	40	902	1378	0.25	0.31	674	947	57.1	65.1	3.7	4.4	12.5	4.3
Karimnagar	64	38	1103	1095	0.35	0.22	713	855	54.9	64.2	3.7	4.8	25.6	8.0
Khammam	69	46	805	1252	0.29	0.29	575	888	56.9	64.8	3.1	5.2	15.8	5.9
Adilabad	71	49	806	1293	0.28	0.29	583	918	52.7	61.0	3.6	4.8	16.9	3.3
Nalgonda	64	48	829	1301	0.27	0.30	609	909	57.2	64.2	3.5	4.9	17.2	13.6
Nizamabad	67	49	945	1039	0.46	0.26	509	769	52.0	61.3	2.9	4.6	12.9	2.2
Mahabubnagar	75	55	866	1349	0.28	0.31	623	925	44.4	55.0	3.4	4.2	28.0	6.4
Medak	67	50	787	1038	0.30	0.25	549	776	51.6	61.4	2.7	3.9	26.2	4.8
<b>Telangana</b>	<b>63</b>	<b>43</b>	<b>852</b>	<b>1201</b>	<b>0.29</b>	<b>0.28</b>	<b>605</b>	<b>860</b>	<b>58.0</b>	<b>66.5</b>	<b>3.5</b>	<b>4.8</b>	<b>19.0</b>	<b>9.5</b>

Source: NSSO 61<sup>st</sup> and 68<sup>th</sup> Rounds on Consumer Expenditure Survey and Employment and Unemployment Survey; Statistical Abstracts, Govt. of AP (undivided)



Table A3: District-wise Human Development Index and its Components for Male and Female

Districts	2004-05										2011-12									
	Income Index*		Education Index		Health Index		HDI		Income Index*		Education Index		Health Index		HDI					
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female				
Hyderabad	0.689	0.448	0.704	0.597	0.755	0.740	0.715	0.583	0.882	0.747	0.813	0.667	0.895	0.881	0.863	0.760				
Ranga Reddy	0.558	0.454	0.435	0.249	0.469	0.542	0.485	0.394	0.833	0.675	0.622	0.421	0.715	0.752	0.718	0.598				
Warangal	0.442	0.268	0.463	0.254	0.362	0.456	0.420	0.315	0.565	0.429	0.528	0.410	0.641	0.691	0.576	0.495				
Karimnagar	0.498	0.299	0.439	0.235	0.388	0.404	0.440	0.305	0.658	0.533	0.557	0.408	0.685	0.684	0.631	0.530				
Khammam	0.558	0.368	0.381	0.241	0.326	0.370	0.411	0.320	0.668	0.553	0.659	0.426	0.588	0.606	0.638	0.523				
Adilabad	0.465	0.344	0.429	0.239	0.250	0.399	0.368	0.320	0.576	0.489	0.626	0.359	0.524	0.615	0.574	0.476				
Nalgonda	0.444	0.302	0.449	0.228	0.365	0.429	0.418	0.309	0.635	0.533	0.547	0.376	0.560	0.596	0.580	0.493				
Nizamabad	0.397	0.268	0.395	0.219	0.294	0.453	0.358	0.298	0.537	0.499	0.576	0.396	0.517	0.621	0.542	0.497				
Mahbubnagar	0.419	0.205	0.363	0.190	0.224	0.328	0.324	0.234	0.541	0.452	0.539	0.326	0.470	0.533	0.515	0.428				
Medak	0.568	0.386	0.333	0.187	0.303	0.442	0.386	0.317	0.850	0.707	0.514	0.319	0.514	0.605	0.608	0.515				
Telangana	0.524	0.343	0.451	0.275	0.369	0.449	0.443	0.349	0.710	0.590	0.636	0.453	0.624	0.667	0.655	0.563				

Note: \*See Appendix for Chapter 2

Source: Computed based on the data from NSSO 61st and 68th Rounds on Consumer Expenditure Survey and Employment and Unemployment Survey; Statistical Abstracts of Govt. of AP (undivided)

Table A4: District-wise Indicators for Human Development Index for Male and Female

Districts	2004-05						2011-12									
	Income*		Education - Literacy (2001)		Education-Mean Years of Schooling		Health (IMR)		Income*		Education Literacy (2011)		Education-Mean Years of Schooling		Health (IMR)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Hyderabad	57853	27670	83.74	73.50	6.45	5.38	32	33	104587	69081	87.0	79.3	7.86	6.12	19	21
Ranga Reddy	38677	28142	75.26	56.49	3.31	1.65	58	51	89973	55317	82.1	69.4	5.41	3.28	36	32
Warangal	27160	15936	68.88	45.09	3.80	1.91	67	59	39489	26039	74.6	55.7	4.44	3.51	42	38
Karimnagar	32211	17509	67.09	42.75	3.55	1.74	65	64	52637	35824	73.6	54.8	4.85	3.52	38	38
Khammam	38654	21624	66.11	47.44	2.90	1.71	71	67	54304	38099	72.3	57.4	6.29	3.67	47	45
Adilabad	29148	20104	64.98	40.30	3.48	1.84	78	64	40866	31287	70.8	51.3	5.89	3.00	53	45
Nalgonda	27332	17636	69.23	44.68	3.62	1.63	67	61	49052	35869	74.1	54.2	4.70	3.13	50	46
Nizamabad	23637	15897	64.91	39.48	3.08	1.63	74	59	36245	32263	71.5	51.5	5.17	3.47	54	44
Mahbubnagar	25315	13130	56.63	31.89	2.91	1.47	80	70	36689	27945	65.2	44.7	4.90	2.78	58	52
Medak	39923	22882	64.33	38.66	2.40	1.30	73	60	94593	61050	71.4	51.4	4.36	2.51	54	46
<b>Telangana</b>	<b>34854</b>	<b>20015</b>	<b>68.79</b>	<b>46.92</b>	<b>3.65</b>	<b>2.11</b>	<b>67</b>	<b>60</b>	<b>61602</b>	<b>42760</b>	<b>75.0</b>	<b>57.9</b>	<b>5.86</b>	<b>4.01</b>	<b>44</b>	<b>40</b>

Note: \*See Appendix for Chapter 2

Source: Computed based on the data from NSSO 61st and 68th Rounds on Consumer Expenditure Survey and Employment and Unemployment Survey; Statistical Abstracts of Govt. of AP (undivided)

Table A5: Indicators for Human Development Index across Social Groups in Telangana

Social Group	2002-04			2007-08			2012-13		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
<b>Comprehensive Coverage Index (CCI)</b>									
SC	52.69	47.89	51.40	59.50	68.90	61.10	71.05	77.65	73.41
ST	44.47	46.62	44.78	55.10	50.40	55.60	76.65	78.30	77.24
BC	49.59	50.40	49.86	62.00	64.40	62.70	72.86	72.54	72.71
OC	52.62	47.48	49.47	67.20	69.00	68.50	78.01	71.07	72.58
All	50.06	48.75	49.58	60.70	66.50	62.20	72.97	73.52	73.29
<b>Standard of Living Index (SLI)</b>									
SC	9.45	18.30	11.78	13.28	19.57	14.50	18.85	24.28	21.29
ST	7.95	15.67	9.37	10.49	19.01	11.14	16.56	24.65	19.23
BC	11.92	19.56	14.61	13.28	21.07	15.60	20.10	26.79	23.71
OC	14.92	21.32	18.88	15.48	22.43	19.25	23.33	29.31	27.46
All	11.47	20.00	14.83	13.10	21.14	15.38	19.46	26.38	22.99
<b>Mean Years of Schooling (EI)</b>									
SC	2.87	6.28	3.70	3.67	6.46	4.15	5.59	8.23	6.78
ST	2.21	4.63	2.66	2.85	5.60	3.07	4.81	8.18	5.98
BC	3.28	6.39	4.36	3.94	7.12	4.90	5.84	8.81	7.49
OC	4.81	7.36	6.46	5.75	8.63	7.33	6.55	10.03	9.00
All	3.32	6.74	4.70	3.91	7.42	4.92	5.67	8.79	7.29

Source: DLHS II (2002-04), DLHS III (2007-08) and DLHS IV (2012-13)

Table A5.1: Indicators for Human Development Index for Muslims in Telangana

Year	Comprehensive Coverage Index			Standard of Living Index			Mean Years of Schooling		
2002-04	51.00	45.49	47.05	14.60	19.08	17.89	4.46	6.15	5.73
2007-08	64.60	67.66	66.34	14.65	21.13	18.68	4.31	6.80	5.88
2012-13	70.98	70.82	70.92	21.76	26.95	25.82	6.26	8.05	7.67

Source: DLHS II (2002-04), DLHS III (2007-08) and DLHS IV (2012-13)

Table A6: Indicators for Human Development Index across Occupational Groups in Rural Telangana

Occupations	Comprehensive Coverage Index (CCI)		Standard of Living Index (SLI)		Mean Years of Schooling (EI)	
	2007-08	2012-13	2007-08	2012-13	2007-08	2012-13
Self-employed-agriculture & allied	54.33	73.38	11.9	18.58	3.8	5.89
Casual Labour-agriculture & allied	60.71	72.03	12.1	17.47	3.26	5.09
Skilled Workers	60.13	67.65	14.0	21.20	4.5	6.16
Unskilled Workers	54.93	70.81	12.5	18.65	2.98	7.70
All Occupations	59.12	72.97	12.5	19.46	3.51	5.67

Source: DLHS III (2007-08) and DLHS IV (2012-13)

Table A7: Indicators for Human Development Index across Occupational Groups in Urban Telangana

Occupations	Comprehensive Coverage Index (CCI)		Standard of Living Index (SLI)		Mean Years of Schooling (EI)	
	2007-08	2012-13	2007-08	2012-13	2007-08	2012-13
Professionals/Executives	67.04	54.65	23.19	31.44	10.19	10.89
Self-employed-trade	70.14	51.73	20.79	26.23	6.66	9.20
Skilled Workers	57.39	73.75	20.74	24.13	6.07	8.17
Unskilled Labour	60.01	59.62	17.30	20.63	4.62	9.49
Casual Labour-agriculture & allied	70.31	55.44	16.83	19.13	4.02	7.10
Casual Labour-Services	50.00	50.00	16.03	22.54	4.36	8.78
<b>All Occupations</b>	<b>63.16</b>	<b>73.52</b>	<b>19.45</b>	<b>26.38</b>	<b>6.17</b>	<b>8.79</b>

Source: DLHS III (2007-08) and DLHS IV (2012-13)

Table A8: Sector-wise Per Capita Gross District Domestic Product (Rs.) (2004-05 prices)

Districts	Agriculture		Industry		Services		Non-agriculture		GDDP	
	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
Hyderabad	1277	1055	7414	14898	35138	78755	42551	93653	43828	94708
Ranga Reddy	4279	4515	11875	26064	16935	36266	28810	62330	33090	66845
Warangal	6067	7109	4607	6961	11437	20097	16045	27058	22112	34167
Karimnagar	4109	8511	9241	14411	12079	23126	21320	37537	25429	46049
Khammam	8306	9768	9243	14752	13460	23980	22703	38732	31009	48500
Adilabad	5586	6340	7963	12130	11935	20080	19898	32210	25484	38550
Nalgonda	6613	9339	6068	13082	10398	21844	16466	34925	23079	44264
Nizamabad	4528	9454	4983	6504	10730	19767	15714	26271	20241	35725
Mahbubnagar	4358	7359	5370	7439	9650	16739	15020	24179	19378	31538
Medak	6865	13820	11869	36009	13370	29627	25240	65636	32105	79456
<b>Telangana</b>	<b>5005</b>	<b>7340</b>	<b>7900</b>	<b>15679</b>	<b>15034</b>	<b>30319</b>	<b>22934</b>	<b>45998</b>	<b>27939</b>	<b>53338</b>

Source: Computed based on the data from Directorate of Economics and Statistics, Telangana State, Hyderabad and Census 2001 and 2011

Table A9: District-wise Workers by broad Sectors

Occupations	2001			2011		
	Total Workers	Agriculture Workers	Non-agriculture Workers	Total Workers	Agriculture Workers	Non-agriculture Workers
Hyderabad	1119842	18634	1101208	1413297	51337	1361960
Ranga Reddy	1437606	581919	855687	2196078	619957	1576121
Warangal	1566237	1066126	500111	1705655	1159738	545917
Karimnagar	1711559	1004012	707547	1876768	1117249	759519
Khammam	1244376	897191	347185	1410062	1029509	380553
Adilabad	1123248	684752	438496	1323667	848649	475018
Nalgonda	1594666	1077743	516923	1741693	1188355	553338
Nizamabad	1159606	660630	498976	1261076	726383	534693
Mahbubnagar	1823329	1334251	489078	2082501	1500226	582275
Medak	1293657	875826	417831	1442203	924350	517853
<b>Telangana</b>	<b>14074126</b>	<b>8201084</b>	<b>5873042</b>	<b>16453000</b>	<b>9165753</b>	<b>7287247</b>

Source: Census 2001 and 2011

Table A10: District-wise Public Expenditure on Social Services (Rs. in crores)

Districts	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Ranga Reddy	178.50	195.70	208.55	241.33	323.63	344.03	526.20	558.12	901.89	1066.28	1316.64
Warangal	331.14	356.53	372.77	421.12	500.35	587.90	744.47	820.27	1099.65	1280.60	1460.28
Karimnagar	232.68	268.27	271.70	310.02	396.18	441.64	573.87	633.92	871.87	958.77	1087.23
Khammam	242.61	265.67	272.10	307.91	390.94	418.52	530.26	586.35	836.15	937.82	1052.02
Adilabad	221.23	239.94	246.08	267.54	344.46	357.39	485.91	528.42	714.27	763.01	1007.43
Nalgonda	160.40	179.36	180.78	214.60	277.13	309.69	385.99	448.40	592.29	650.66	671.02
Nizamabad	225.30	279.79	293.64	323.47	389.76	454.95	560.04	668.14	863.87	984.08	1181.30
Mahbubnagar	241.94	265.95	296.31	342.09	407.09	482.72	550.46	684.50	958.31	921.98	1192.46
Medak	187.38	210.58	219.63	238.86	310.64	357.38	468.40	505.39	744.44	781.74	936.21
<b>Total</b>	<b>2021.18</b>	<b>2261.79</b>	<b>2361.56</b>	<b>2666.94</b>	<b>3340.18</b>	<b>3754.22</b>	<b>4825.60</b>	<b>5433.51</b>	<b>7582.74</b>	<b>8344.94</b>	<b>9904.59</b>

Source: <https://treasury.ap.gov.in>

Table A11: District-wise Public Expenditure on Health (Rs. in crores)

Districts	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Ranga Reddy	15.62	16.31	16.54	18.19	20.79	23.03	26.93	33.04	42.98	46.19	53.64
Warangal	42.23	45.45	46.89	52.59	57.68	66.45	74.58	83.86	106.84	143.28	150.02
Karimnagar	17.08	19.11	19.01	21.38	22.87	26.16	28.71	33.79	40.17	44.52	51.65
Khammam	16.24	17.57	17.75	19.39	20.82	23.49	24.31	29.40	37.12	41.94	49.46
Adilabad	15.89	16.63	16.89	18.50	20.86	23.06	30.23	40.23	51.19	67.38	74.08
Nalgonda	17.35	18.89	19.63	19.45	20.88	22.18	25.17	29.78	36.10	42.15	47.02
Nizamabad	11.67	12.90	12.82	14.01	14.61	16.59	18.29	20.98	25.44	31.38	35.07
Mahbubnagar	18.42	19.63	22.07	22.52	24.38	26.90	29.52	35.64	44.30	52.65	59.05
Medak	16.94	17.98	18.90	19.83	21.87	24.23	28.01	34.47	42.86	48.32	57.58
<b>Total</b>	<b>171.44</b>	<b>184.47</b>	<b>190.50</b>	<b>205.86</b>	<b>224.76</b>	<b>252.09</b>	<b>285.75</b>	<b>341.19</b>	<b>427.00</b>	<b>517.81</b>	<b>577.57</b>

Source: <https://treasury.ap.gov.in>

Table A12: District-wise Public Expenditure on Education (Rs. in crores)

Districts	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Ranga Reddy	97.56	109.72	114.57	130.17	147.16	151.28	178.38	210.91	319.45	353.69	424.30
Warangal	180.50	200.12	191.63	228.62	264.99	282.15	317.43	365.71	540.16	596.11	698.56
Karimnagar	145.66	164.34	164.06	195.40	222.93	239.44	271.40	317.94	469.20	525.38	590.53
Khammam	122.82	138.12	146.13	160.16	187.74	205.90	224.60	267.62	376.02	429.83	493.12
Adilabad	117.23	143.69	136.70	158.31	185.27	187.87	230.19	272.24	362.62	427.53	480.54
Nalgonda	129.33	165.71	177.90	196.28	227.30	250.95	272.77	329.13	467.43	528.06	598.72
Nizamabad	100.34	117.42	114.28	137.59	160.03	182.35	200.43	231.22	327.71	387.34	427.06
Mahbubnagar	148.10	171.72	187.31	214.14	243.52	272.99	291.99	342.93	507.41	565.99	645.83
Medak	110.78	130.29	134.41	151.14	176.40	191.74	217.14	253.92	381.36	432.94	506.95
<b>Total</b>	<b>1152.32</b>	<b>1341.13</b>	<b>1366.99</b>	<b>1571.81</b>	<b>1815.34</b>	<b>1964.67</b>	<b>2204.33</b>	<b>2591.62</b>	<b>3751.36</b>	<b>4246.87</b>	<b>4865.61</b>

Source: <https://treasury.ap.gov.in>

Table A13: District-wise Public Expenditure on Economic Services (Rs. in crores)

Districts	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Ranga Reddy	86.85	92.68	179.63	133.73	274.02	148.07	184.98	134.97	145.81	152.49	181.84
Warangal	69.68	90.82	88.55	100.32	127.41	178.18	141.64	169.28	157.16	186.39	203.46
Karimnagar	74.52	88.95	96.43	100.54	132.35	174.90	141.61	166.69	168.30	225.34	204.01
Khammam	66.61	81.43	80.20	90.38	112.78	150.07	138.30	170.81	149.70	195.55	208.37
Adilabad	65.11	77.93	82.76	86.94	115.69	144.72	131.77	137.23	147.49	150.43	181.59
Nalgonda	71.29	86.18	80.13	94.11	116.70	157.06	153.05	182.30	155.90	210.55	233.70
Nizamabad	53.42	64.45	60.16	74.01	98.11	122.59	134.32	114.15	117.59	136.15	150.97
Mahbubnagar	77.88	100.99	96.26	104.81	138.00	176.03	227.28	188.40	194.69	192.52	202.15
Medak	54.75	74.68	72.36	81.28	112.98	147.05	131.13	130.57	143.83	189.69	201.32
<b>Total</b>	<b>620.11</b>	<b>758.11</b>	<b>836.48</b>	<b>866.12</b>	<b>1228.04</b>	<b>1398.67</b>	<b>1384.08</b>	<b>1394.40</b>	<b>1380.47</b>	<b>1639.11</b>	<b>1767.41</b>

Source: <https://treasury.ap.gov.in>

Table A14: School Attendance Rate among Boys and Girls in Telangana State (Percentage)

Districts	1993-94			201-12		
	Persons	Male	Female	Persons	Male	Female
Adilabad	66.7	71.8	61.6	95.4	95.9	94.9
Hyderabad	91.4	92.9	89.4	97.4	98.1	96.7
Karimnagar	77.5	88.0	67.7	96.4	97.6	94.8
Khammam	70.9	76.7	65.6	95.0	98.9	90.6
Mahbubnagar	44.9	54.7	34.1	89.4	89.1	89.8
Medak	72.1	73.4	70.3	95.4	93.9	97.0
Nalgonda	67.7	78.2	56.6	95.0	94.1	95.8
Nizamabad	67.9	75.2	58.8	97.7	98.2	97.1
Ranga Reddy	75.8	83.6	67.4	99.1	99.7	98.5
Warangal	72.1	81.3	61.3	95.8	96.8	94.1
<b>Telangana</b>	<b>69.7</b>	<b>77.0</b>	<b>61.7</b>	<b>95.6</b>	<b>96.2</b>	<b>95.1</b>

Note: Children in the age group of 6-14 years currently attending school: Source: NSSO 50<sup>th</sup> and 68<sup>th</sup> Employment and Unemployment Rounds

Table A15: School Attendance Rate across Social Groups in Telangana State (Percentage)

Location	Category	1993-94				2011-12			
		ST	SC	Others	All	ST	SC	Others	All
Rural	Persons	39.1	55.3	70.1	63.6	91.0	93.0	95.9	94.7
	Male	50.0	66.5	78.1	72.5	92.8	95.0	95.5	95.1
	Female	26.6	43.7	61.6	54.1	89.0	91.0	96.5	94.3
Urban	Persons	75.2	87.4	88.3	87.9	90.0	98.7	97.2	97.1
	Male	78.9	86.2	90.4	89.8	95.7	99.6	97.9	98.0
	Female	70.5	88.6	85.7	85.7	83.4	97.9	96.4	96.2
Total	Persons	41.3	59.4	75.6	69.7	90.9	94.4	96.5	95.6
	Male	51.8	68.9	82.0	77.0	93.1	96.1	96.5	96.2
	Female	29.2	49.6	68.5	61.7	88.4	92.7	96.4	95.1

Note: Children in the age group of 6-14 years currently attending school, Source: NSSO 50<sup>th</sup> and 68<sup>th</sup> Employment and Unemployment Rounds

**Table A16: School Attendance Rate among Boys and Girls in Telangana State (percentage)**

Districts	Rural						Urban					
	Persons		Male		Female		Persons		Male		Female	
	1993	2011	1993	2011	1993	2011	1993	2011	1993	2011	1993	2011
Adilabad	61.9	95.2	71.1	94.8	52.9	95.6	79.3	95.9	73.6	98.6	85.4	93.7
Hyderabad							91.4	97.4	92.9	98.1	89.4	96.7
Karimnagar	75.5	95.6	86.6	97.0	65.8	93.7	83.0	98.8	91.2	99.3	73.6	98.1
Khammam	66.3	94.8	72.9	98.8	59.9	90.6	90.7	96.0	94.9	99.4	87.5	90.6
Mahbubnagar	41.2	88.2	52.1	87.9	29.3	88.5	78.3	97.1	78.4	96.7	78.2	97.6
Medak	69.9	95.8	71.0	93.6	68.4	98.0	87.8	92.4	89.9	95.8	84.6	88.5
Nalgonda	63.1	95.4	74.0	94.8	52.6	96.0	95.7	91.8	97.4	89.6	92.5	94.4
Nizamabad	65.2	97.8	72.7	97.6	55.7	98.0	85.9	97.5	91.5	99.9	78.9	94.7
Ranga Reddy	68.8	99.3	79.1	99.9	57.6	98.6	92.9	98.2	95.0	98.4	90.7	97.9
Warangal	69.2	95.0	80.9	96.6	55.5	92.1	83.4	98.7	82.6	97.8	84.4	99.9
Telangana	63.6	94.7	72.5	95.1	54.1	94.3	87.9	97.1	89.8	98.0	85.7	96.2

Note: Children in the age group of 6-14 years currently attending school; Source: NSSO 50<sup>th</sup> and 68<sup>th</sup> Employment and Unemployment Rounds

**Table A17: Net Enrolment Ratio at Secondary and Higher Secondary Level among Boys and Girls in Telangana State (Percentages)**

Districts	1993-94			2011-12		
	Persons	Male	Female	Persons	Male	Female
Adilabad	21.8	29.9	13.9	68.3	68.4	68.3
Hyderabad	47.1	50.5	42.7	68.8	67.2	70.6
Karimnagar	28.2	32.2	24.0	67.6	72.6	61.9
Khammam	28.9	31.1	26.7	67.4	71.0	63.5
Mahbubnagar	15.1	12.8	18.1	59.7	53.3	67.5
Medak	31.8	34.6	27.7	61.8	62.6	60.5
Nalgonda	21.2	29.6	14.6	72.6	80.2	65.0
Nizamabad	17.0	21.4	9.0	76.1	71.0	80.1
Ranga Reddy	24.8	29.6	18.8	69.7	70.5	68.7
Warangal	32.7	46.6	16.0	63.6	56.7	70.8
Telangana	26.5	31.3	21.0	67.5	67.1	67.9

Note: Children in the age group of 14-17 years attending 9<sup>th</sup> to 12<sup>th</sup> classes are considered; Source: NSSO 50<sup>th</sup> and 68<sup>th</sup> Employment and Unemployment Rounds

**Table A18: Net Enrolment Ratio at Secondary and Higher Secondary Levels across Social Groups in Telangana State (Percentages)**

Location	Category	1993-94				2011-12			
		ST	SC	Others	All	ST	SC	Others	All
Rural	Persons	10.1	12.6	23.3	20.0	59.8	71.1	65.7	65.9
	Male	11.4	20.2	28.9	25.6	53.5	75.0	64.4	65.1
	Female	8.9	1.5	16.8	13.4	65.8	66.1	67.1	66.8
Urban	Persons	5.9	49.3	42.3	42.3	71.4	71.7	69.7	70.0
	Male	15.7	56.0	44.2	45.1	79.5	69.8	70.1	70.3
	Female	0.0	39.1	40.1	39.0	62.0	73.5	69.3	69.6
Total	Persons	9.8	18.9	29.7	26.5	61.3	71.3	67.4	67.5
	Male	11.6	26.4	34.1	31.3	57.0	73.6	66.9	67.1
	Female	8.1	7.8	24.7	21.0	65.4	68.7	68.0	67.9

Note: Children in the age group of 14-17 years attending 9<sup>th</sup> to 12<sup>th</sup> classes are considered

Source: NSSO 50<sup>th</sup> and 68<sup>th</sup> Employment and Unemployment Rounds



**Table A19: Net Enrolment Ratio at Secondary and Higher Secondary Level in Rural and Urban Areas of Telangana State(Percentage)**

Districts	Rural						Urban					
	Persons		Male		Female		Persons		Male		Female	
	1993-94	2011-12	1993-4	2011-2	1993-94	2011-12	1993-94	2011-2	1993-94	2011-2	1993-94	2011-12
Adilabad	15.8	62.6	20.8	64.5	11.4	60.1	35.6	79.7	47.8	77.1	20.8	82.3
Hyderabad							47.1	68.8	50.5	67.2	42.7	70.6
Karimnagar	22.1	68.7	29.2	74.3	15.4	62.7	45.2	61.6	39.4	64.8	52.6	55.5
Khammam	26.5	64.3	28.3	68.5	24.8	59.1	36.2	74.8	39.7	77.4	32.8	72.4
Mahbubnagar	11.6	56.7	10.0	48.9	13.8	66.0	39.1	80.0	37.7	81.0	40.3	78.6
Medak	31.9	61.8	33.4	63.1	29.6	59.5	30.7	62.4	43.4	59.3	19.2	74.5
Nalgonda	18.2	74.2	27.4	79.0	10.9	68.9	40.0	64.2	43.4	90.2	37.4	50.6
Nizamabad	10.8	75.4	16.8	65.8	0.7	81.6	44.8	77.8	39.5	80.3	58.3	74.7
Ranga Reddy	19.3	68.9	26.0	68.7	7.2	69.1	34.3	76.9	39.8	83.2	30.7	63.7
Warangal	26.7	63.5	45.8	50.5	5.1	76.0	50.4	63.9	48.4	70.3	53.4	55.6
<b>Telangana</b>	<b>20.0</b>	<b>65.9</b>	<b>25.6</b>	<b>65.1</b>	<b>13.4</b>	<b>66.8</b>	<b>42.3</b>	<b>70.0</b>	<b>45.1</b>	<b>70.3</b>	<b>39.0</b>	<b>69.6</b>

Note: Children in the age group of 14-17 years attending 9<sup>th</sup> to 12<sup>th</sup> classes are considered

Source: NSSO 50<sup>th</sup> and 68<sup>th</sup> Employment and Unemployment Rounds

**Table A20: Proportion of students (6-14 years) never attended school in Telangana State by Sex, Location and Caste, 2011-12 (Percentages)**

Districts	All	Rural	Urban	Male	Female	SC	ST
1993-94	28.06	34.06	10.59	20.11	36.41	38.23	52.65
2011-12	2.67	3.10	1.97	2.48	2.88	3.73	6.53
CAGR	(12.24)	(12.45)	(8.92)	(10.97)	(13.13)	(12.12)	(10.94)
All India, 2011-12	4.40	4.85	3.07	3.99	4.88	5.25	5.19
Rank of Telangana	18	20	16	19	20	19	25
Min. value (State)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max. value (State)	10.19	10.62	7.68	9.37	11.15	12.62	13.16

Note: Figures in brackets indicate 'minus'

Source: As per Table A5.21

**Table A21: School Dropout Rate among Boys and Girls in Telangana State (Percentages)**

Districts	1993-94			2011-12		
	Persons	Male	Female	Persons	Male	Female
Adilabad	33.3	28.2	38.4	3.3	3.8	2.9
Hyderabad	8.6	7.1	10.6	0.9	0.5	1.3
Karimnagar	22.5	12.0	32.3	0.6	0.9	0.1
Khammam	29.1	23.3	34.4	1.6	0.1	3.2
Mahbubnagar	55.1	45.3	65.9	3.2	1.7	5.1
Medak	27.9	26.6	29.7	1.9	3.4	0.3
Nalgonda	32.3	21.8	43.4	1.0	1.6	0.5
Nizamabad	32.1	24.8	41.2	1.3	1.2	1.5
Ranga Reddy	24.2	16.4	32.6	0.5	0.1	1.0
Warangal	27.9	18.7	38.7	3.2	1.6	5.9
<b>Telangana</b>	<b>30.3</b>	<b>23.0</b>	<b>38.3</b>	<b>1.7</b>	<b>1.4</b>	<b>2.1</b>

Note: Children in the age group of 6-14 years

Source: NSSO 50<sup>th</sup> and 68<sup>th</sup> Employment and Unemployment Rounds

Table A22: School Dropout Rate across Social Groups in Telangana State (Percentages)

Location	Category	1993-94				2011-12			
		ST	SC	Others	All	ST	SC	Others	All
Rural	Persons	60.9	44.7	29.9	36.4	4.4	2.8	1.6	2.2
	Male	50.0	33.5	21.9	27.5	3.4	0.9	1.7	1.8
	Female	73.4	56.3	38.4	45.9	5.5	4.6	1.4	2.6
Urban	Persons	24.8	12.6	11.7	12.1	0.3	0.2	1.6	0.9
	Male	21.1	13.8	9.6	10.2	0.0	0.0	0.7	0.6
	Female	29.5	11.4	14.3	14.3	0.6	0.3	2.0	1.2
Total	Persons	58.7	40.6	24.4	30.3	4.0	2.1	1.3	1.7
	Male	48.2	31.1	18.0	23.0	3.0	0.7	1.3	1.4
	Female	70.8	50.4	31.5	38.3	5.0	3.6	1.3	2.1

Note: Children in the age group of 6-14 years

Source: NSSO 50<sup>th</sup> and 68<sup>th</sup> Employment and Unemployment Rounds

Table A23: School Dropout Rates in Rural and Urban Areas of Telangana State (Percentages)

Districts	Rural						Urban					
	Persons		Male		Female		Persons		Male		Female	
	1993-94	2011-12	1993-94	2011-12	1993-94	2011-12	1993-94	2011-12	1993-94	2011-12	1993-94	2011-12
Adilabad	38.1	4.7	28.9	5.2	47.1	4.2	20.7	0.2	26.4	0.0	14.6	0.4
Hyderabad							8.6	0.9	7.1	0.5	10.6	1.3
Karimnagar	24.5	0.6	13.4	1.1	34.2	0.0	17.0	0.5	8.8	0.4	26.4	0.6
Khammam	33.7	1.9	27.1	0.1	40.1	3.8	9.3	0.0	5.1	0.0	12.5	0.0
Mahbubnagar	58.8	3.7	47.9	1.8	70.7	6.0	21.7	0.3	21.6	0.5	21.8	0.0
Medak	30.1	2.0	29.0	3.8	31.6	0.0	12.2	1.0	10.1	0.0	15.4	2.2
Nalgonda	36.9	0.4	26.0	0.8	47.4	0.0	4.3	5.7	2.6	6.4	7.5	4.9
Nizamabad	34.8	1.6	27.3	1.7	44.3	1.5	14.1	0.7	8.5	0.0	21.1	1.4
Ranga Reddy	31.2	0.5	20.9	0.0	42.4	1.0	7.1	0.7	5.0	0.9	9.3	0.6
Warangal	30.8	4.0	19.1	1.8	44.5	7.9	16.6	0.4	17.4	0.7	15.6	0.1
Telangana	36.4	2.2	27.5	1.8	45.9	2.6	12.1	0.9	10.2	0.6	14.3	1.2

Note: Children in the age group of 6-14 years

Source: NSSO 50<sup>th</sup> and 68<sup>th</sup> Employment and Unemployment Rounds

Table A24: District-wise Primary Schools in Private Sector (%)										
Districts	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Top Level HDI Districts</b>										
Hyderabad	64.2	64.5	61.8	66.5	66.5	66.4	66.1	66.8	67.2	71.6
Ranga Reddy	32.9	35.1	37.0	38.0	38.3	41.8	42.4	42.7	44.0	47.0
<b>Middle Level HDI Districts</b>										
Warangal	20.5	21.1	21.4	21.6	22.1	21.8	23.3	24.1	24.7	26.0
Karimnagar	25.2	26.3	27.4	28.1	28.4	29.8	29.0	30.2	29.9	30.5
Khammam	8.3	9.3	9.5	10.2	10.5	11.7	11.9	12.4	13.2	14.0
Adilabad	10.6	11.4	11.2	11.8	12.0	12.5	12.9	13.1	14.0	14.6
Nalgonda	15.1	15.8	16.1	17.2	17.4	19.0	20.1	22.4	23.2	24.6
<b>Bottom Level HDI Districts</b>										
Nizamabad	18.3	19.2	19.6	21.7	21.4	23.3	24.2	24.1	23.8	25.3
Mahbubnagar	12.7	13.2	13.3	14.1	14.4	17.0	17.7	18.4	18.7	20.9
Medak	8.2	9.7	11.9	13.0	13.4	14.4	15.1	16.6	17.6	19.2
Telangana	19.7	20.7	21.2	22.1	22.3	23.7	24.2	25.0	25.6	27.4

Source: District Report Cards, DISE

Table A25: District-wise Upper Primary Schools in Private Sector (%)										
Districts	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Top Level HDI Districts</b>										
Hyderabad	81.1	81.5	76.5	81.6	86.1	86.3	86.2	86.3	86.7	87.4
Ranga Reddy	57.5	59.2	61.7	61.9	63.1	65.7	65.4	65.0	66.4	68.7
<b>Middle Level HDI Districts</b>										
Warangal	41.3	41.7	43.0	43.1	46.9	46.7	48.8	48.4	48.6	48.3
Karimnagar	43.5	45.2	46.6	47.0	49.1	50.7	48.6	49.0	49.4	49.5
Khammam	17.6	19.8	21.7	22.9	25.0	28.7	29.1	29.2	30.1	31.8
Adilabad	29.9	29.4	29.4	30.7	34.1	34.2	34.9	35.7	37.3	37.5
Nalgonda	35.4	36.0	36.7	38.6	40.2	41.7	44.0	45.7	46.2	46.9
<b>Bottom Level HDI Districts</b>										
Nizamabad	33.5	34.4	35.3	37.4	39.6	41.0	42.9	42.5	42.7	42.1
Mahbubnagar	27.5	27.8	28.2	29.4	31.2	33.2	34.5	35.6	36.3	39.0
Medak	17.8	20.3	23.8	26.3	28.3	29.3	30.2	32.2	33.8	34.7
Telangana	39.7	40.8	41.8	43.0	45.5	46.9	47.4	47.7	48.7	49.6

Source: District Report Cards, DISE

Table A26 District-wise Secondary Schools in Private Sector (%)										
Districts	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Top Level HDI Districts</b>										
Hyderabad	80.2	82.0	82.5	82.4	82.6	82.6	82.8	83.1	84.1	83.9
Ranga Reddy	58.7	61.6	63.9	64.1	64.0	65.9	65.7	66.0	67.6	68.8
<b>Middle Level HDI Districts</b>										
Warangal	45.4	46.4	47.2	46.0	47.4	47.5	48.6	48.3	49.0	48.9
Karimnagar	41.1	43.1	43.6	43.3	44.6	45.8	45.5	44.2	44.7	43.2
Khammam	22.8	26.9	28.2	29.0	29.7	34.6	34.8	35.1	36.1	36.0
Adilabad	37.1	36.2	34.7	35.0	36.3	36.5	35.9	34.9	35.3	34.3
Nalgonda	34.6	35.6	37.1	38.5	39.4	40.8	43.7	44.5	44.9	44.5
<b>Bottom Level HDI Districts</b>										
Nizamabad	30.5	30.7	30.4	32.5	33.2	34.1	35.4	34.9	36.3	36.1
Mahbubnagar	28.4	29.3	31.3	32.7	33.9	35.8	35.7	36.2	36.7	38.8
Medak	18.2	21.2	24.3	26.5	26.5	27.8	28.6	29.8	31.5	31.8
Telangana	43.0	44.8	45.9	46.1	46.7	47.9	48.2	48.1	49.3	49.3

Source: District Report Cards, DISE

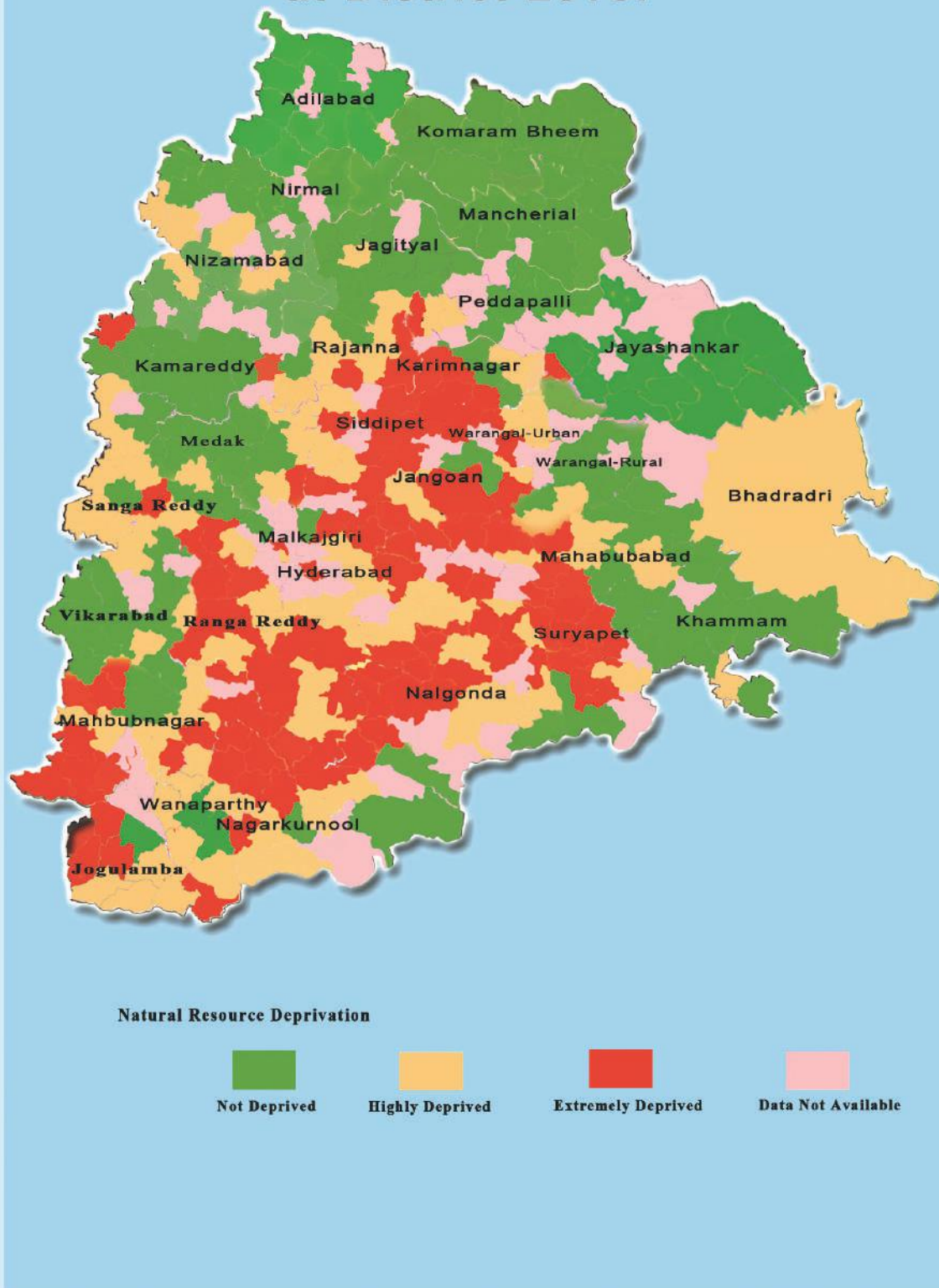
Table A27: District-wise All Schools in Private Sector (%)										
Districts	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Top Level HDI Districts</b>										
Hyderabad	73.5	74.4	71.5	75.4	76.9	76.8	76.8	77.2	78.1	80.1
Ranga Reddy	44.7	47.2	49.4	50.3	50.7	53.6	53.9	54.3	55.9	58.3
<b>Middle Level HDI Districts</b>										
Warangal	29.9	30.7	31.3	31.3	32.7	32.4	34.3	34.8	35.5	36.6
Karimnagar	33.1	34.8	36.0	36.6	37.5	38.8	37.7	38.5	38.7	39.0
Khammam	12.2	13.9	14.5	15.5	16.2	18.5	18.7	19.3	20.3	21.3
Adilabad	17.6	18.3	18.0	18.8	19.7	20.1	20.7	21.0	22.2	22.7
Nalgonda	23.1	24.0	24.7	26.2	26.8	28.4	30.4	32.5	33.4	34.6
<b>Bottom Level HDI Districts</b>										
Nizamabad	24.4	25.3	25.8	28.0	28.5	30.0	31.4	31.3	31.4	32.2
Mahbubnagar	18.4	19.0	19.5	20.7	21.4	23.8	24.8	25.6	26.2	28.7
Medak	12.1	14.2	16.9	18.7	19.3	20.4	21.2	23.0	24.4	25.7
Telangana	28.5	29.9	30.6	31.7	32.5	33.8	34.5	35.2	36.2	37.7

Source: District Report Cards, DISE

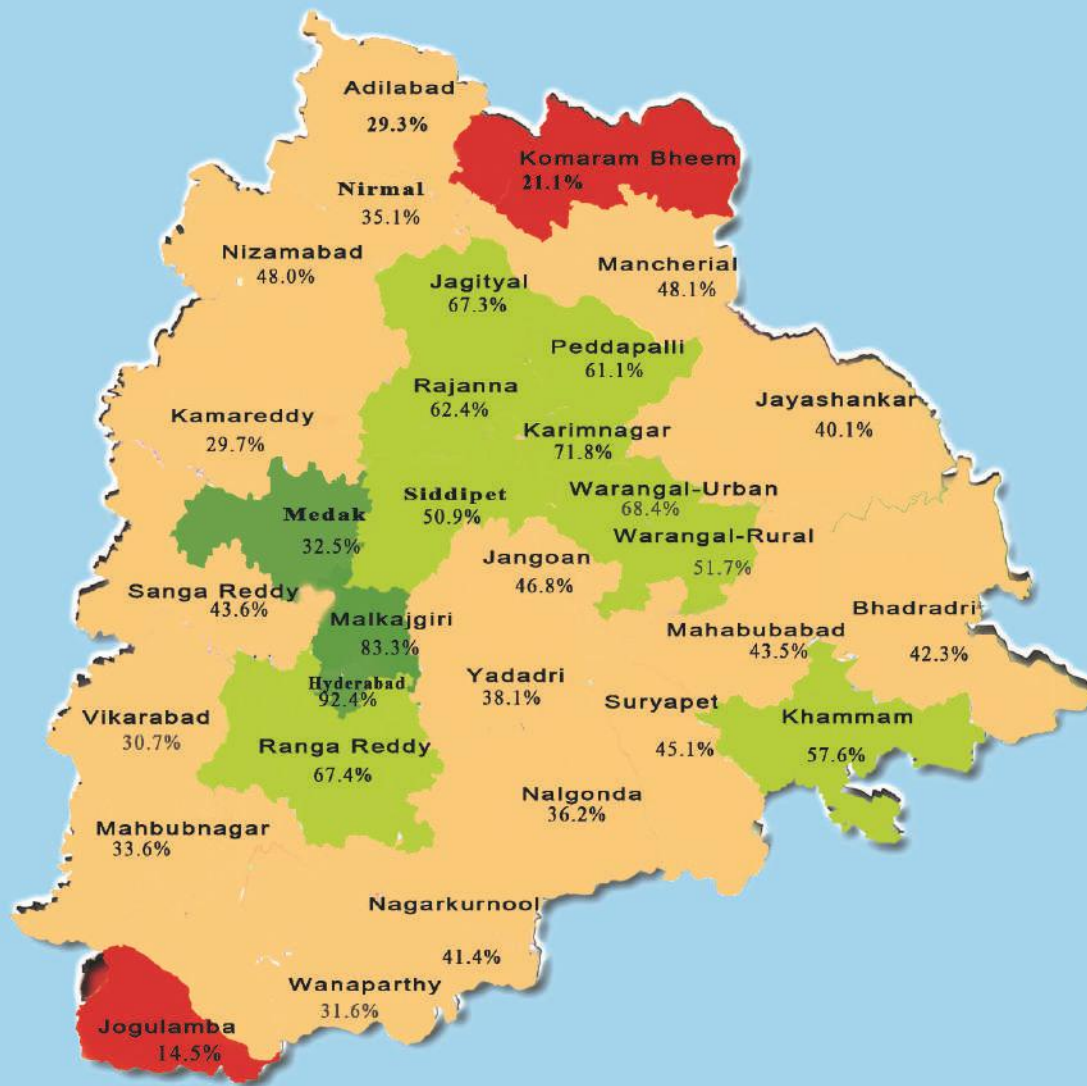
# *Appendix IV*

## Maps of Chapter-7

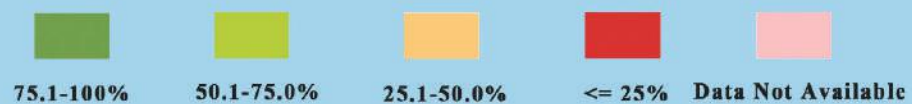
## Map 7.A: Natural Resource Deprivation at District Level



## Map 7.B: District-wise % of Households having Drinking Water Facility within the Premises



Drinking Water Facility within the Premises of the Households

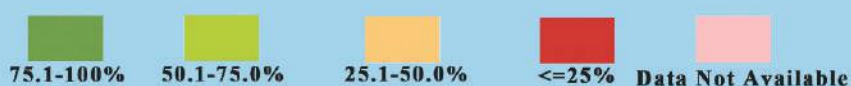




## Map 7.C: District-wise % of Households having Toilet Facility within the Premises

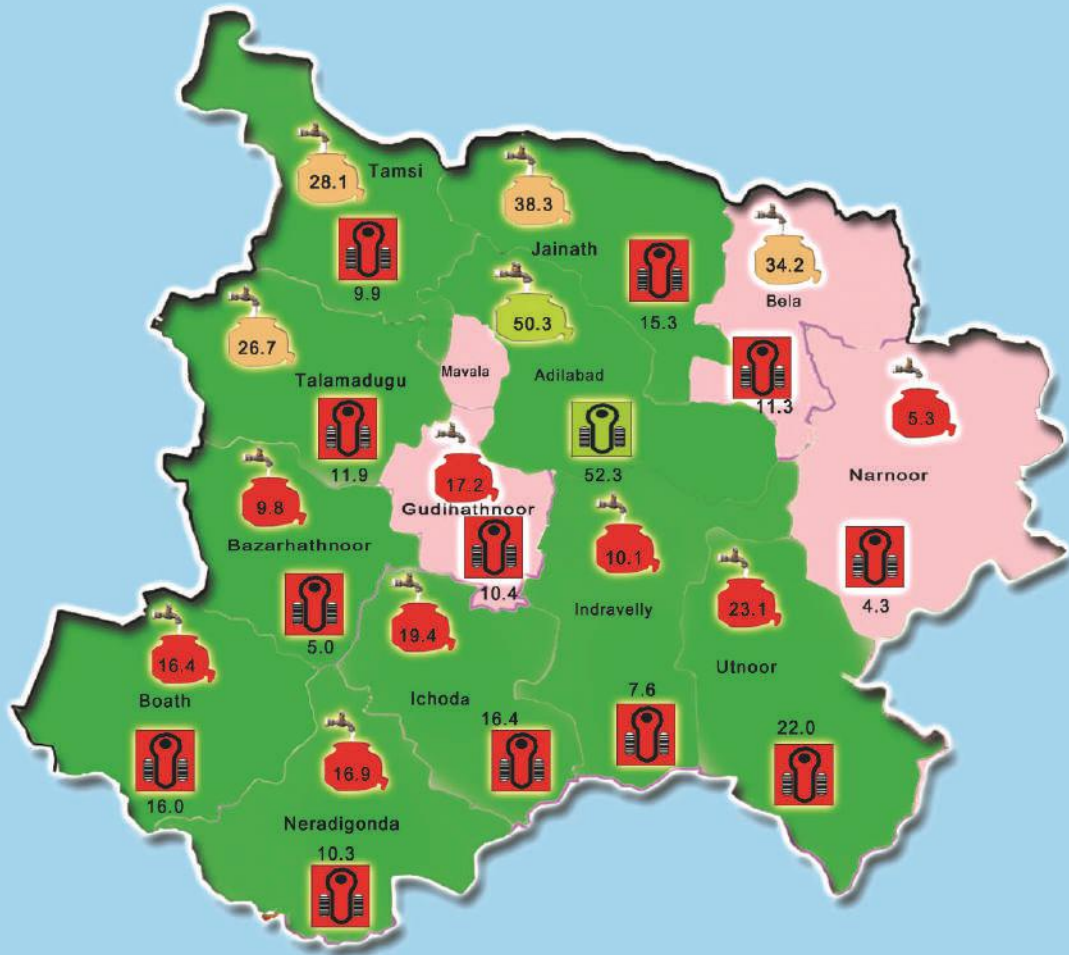


Toilet Facility within the Premises of the Households



# Map 7.1: Adilabad District

Mandal - wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



## Natural Resource Deprivation



Not Deprived



Highly Deprived



Extremely Deprived



Data Not Available for all Categories

## Drinking Water Facility and Toilet Facility within the Premises of the Households



75.1-100%



50.1-75.0%



25.1-50.0%



<=25%



75.1-100%



50.1-75.0%



25.1-50.0%



<=25%

# Map 7.2: Bhadradi District

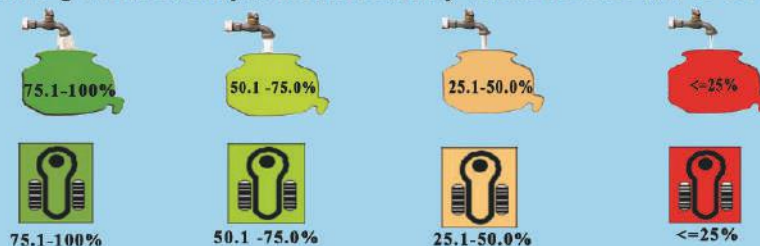
Mandal-wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



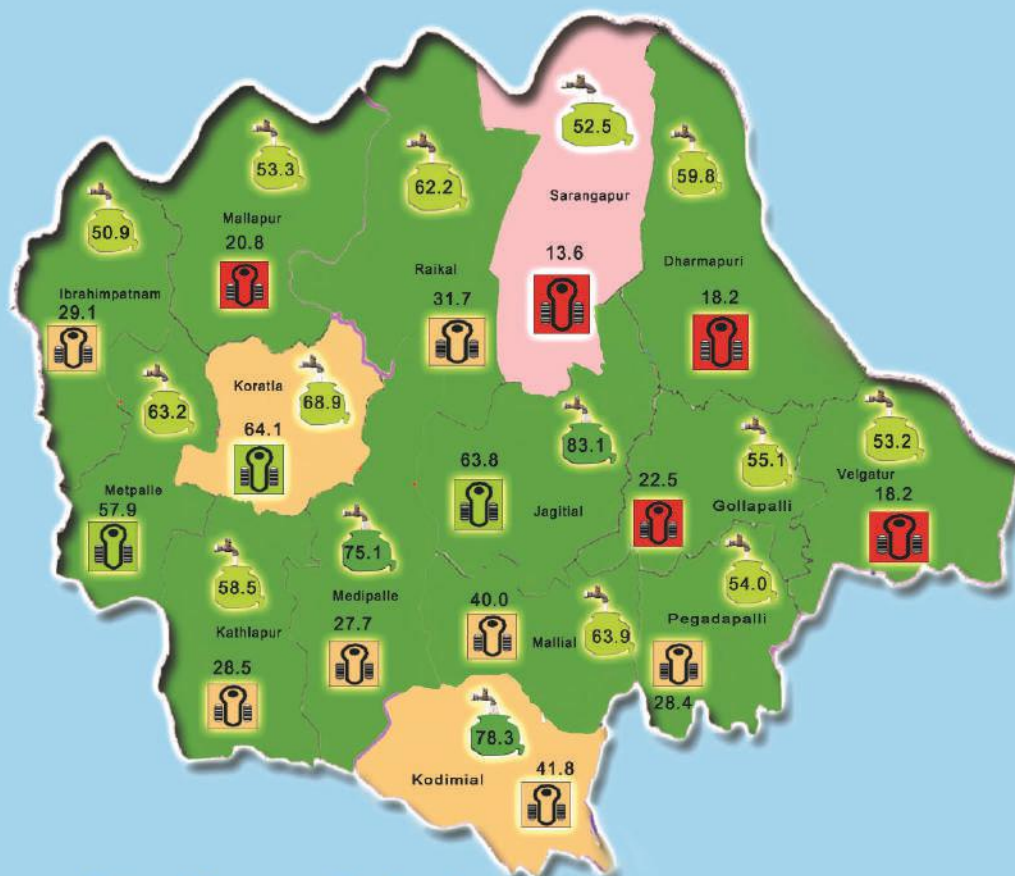
### Drinking Water Facility and Toilet Facility within the Premises of the Households





# Map 7.3: Jagtial District

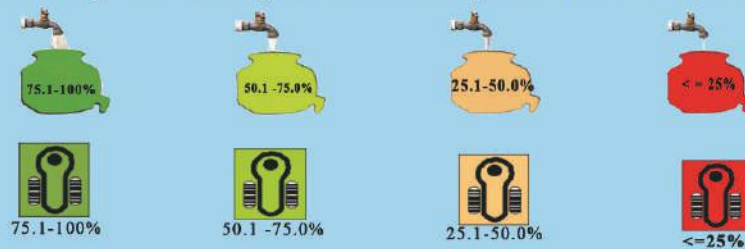
Mandal-wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

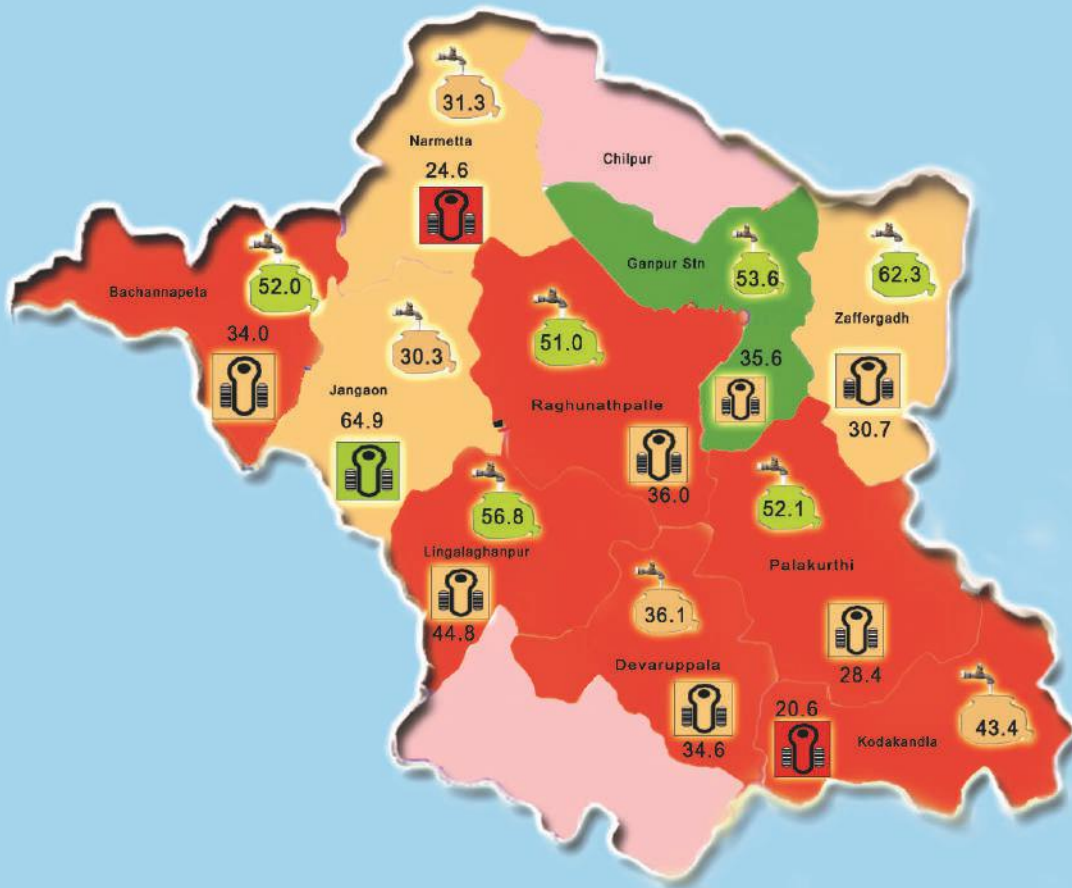


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.4: Jangoan District

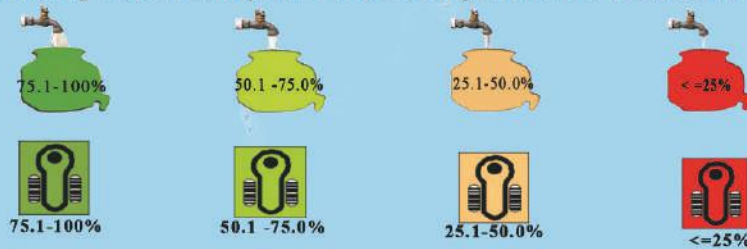
Mandal - wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

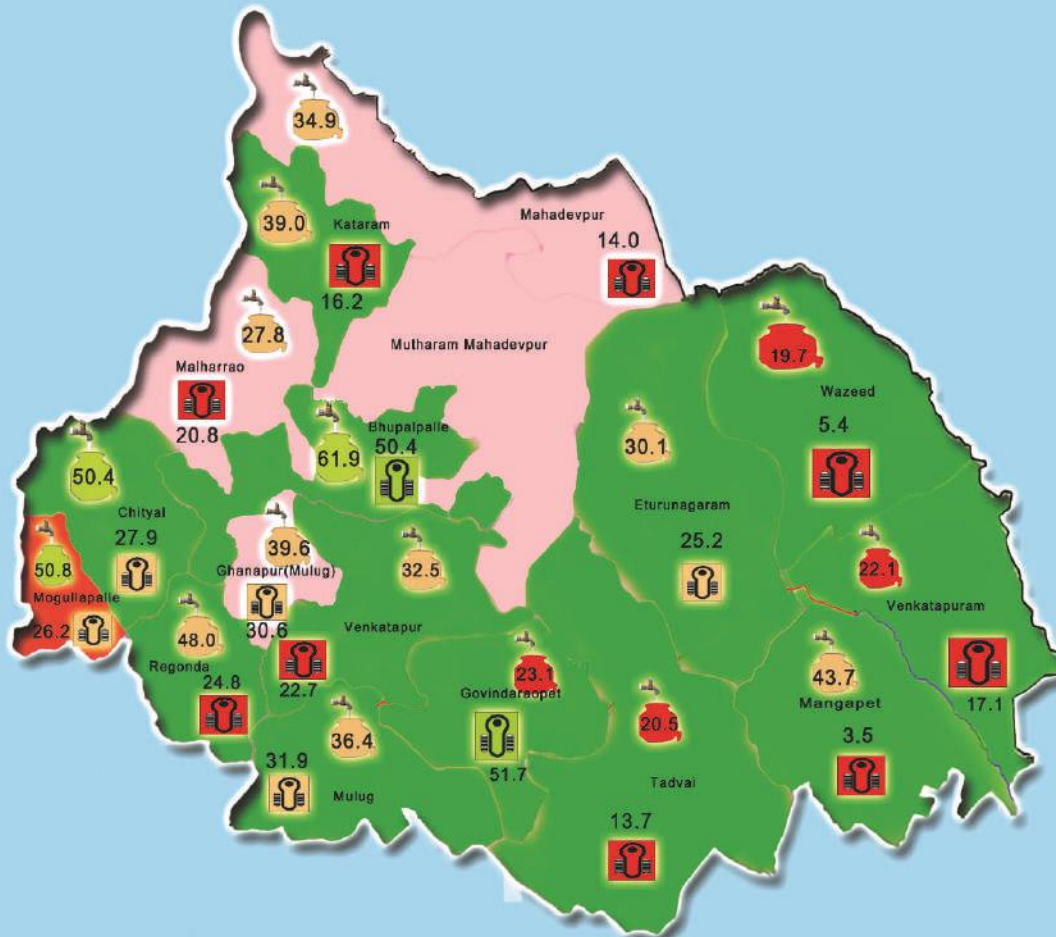


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.5: Jayashankar District

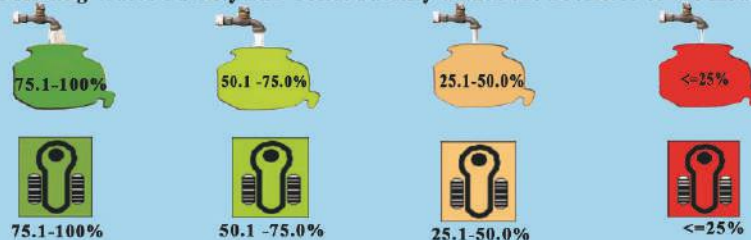
Mandal - wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



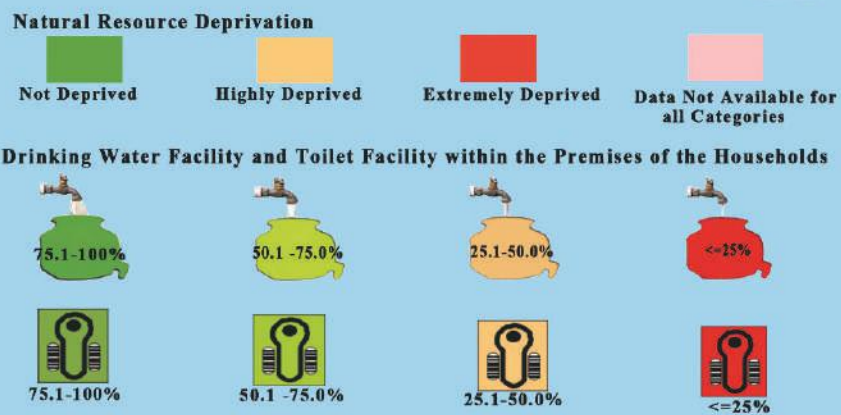
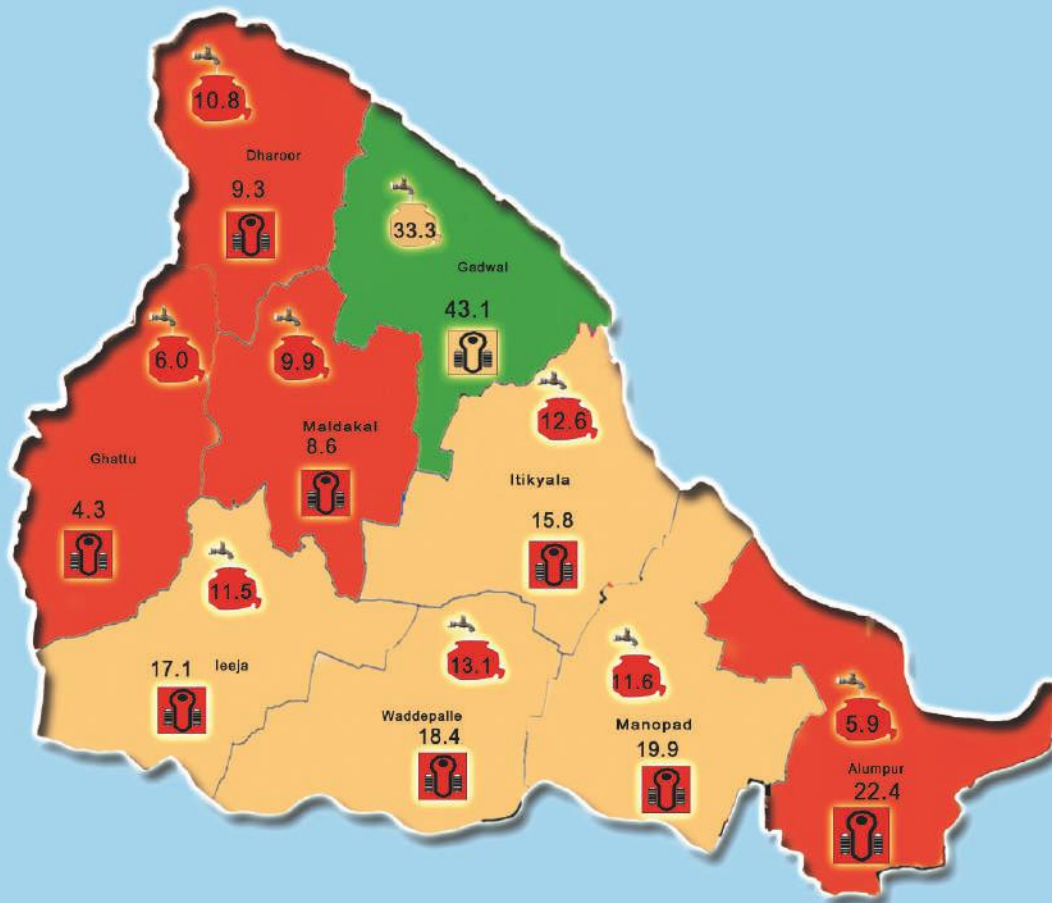
### Drinking Water Facility and Toilet Facility within the Premises of the Households





# Map 7.6: Jogulamba District

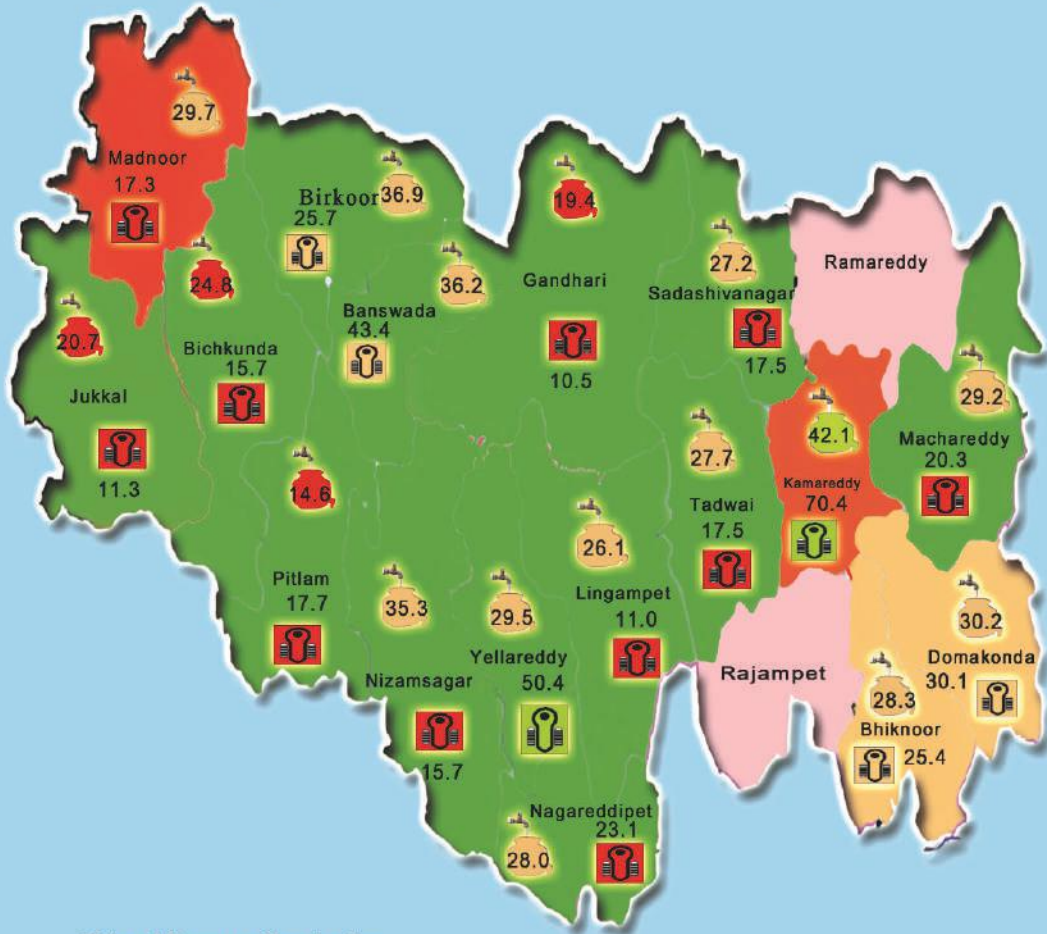
Mandal -wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises





# Map 7.7: Kamareddy District

Mandal-wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

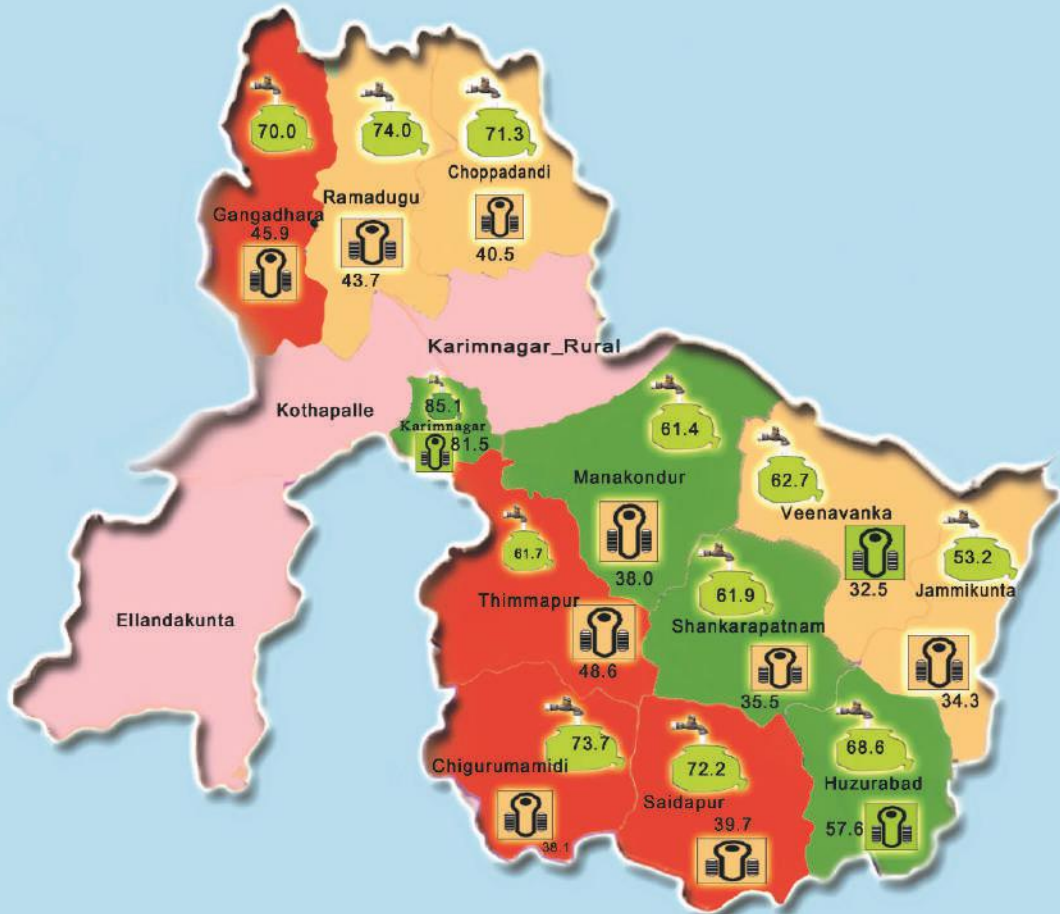


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.8: Karimnagar District

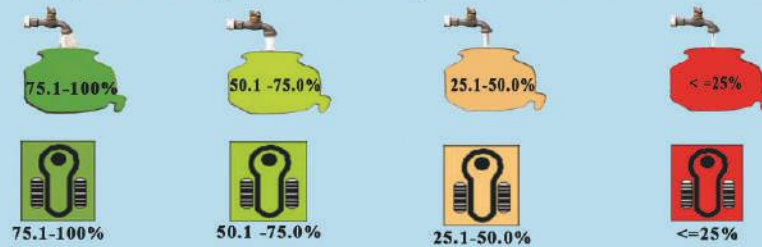
Mandal -wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

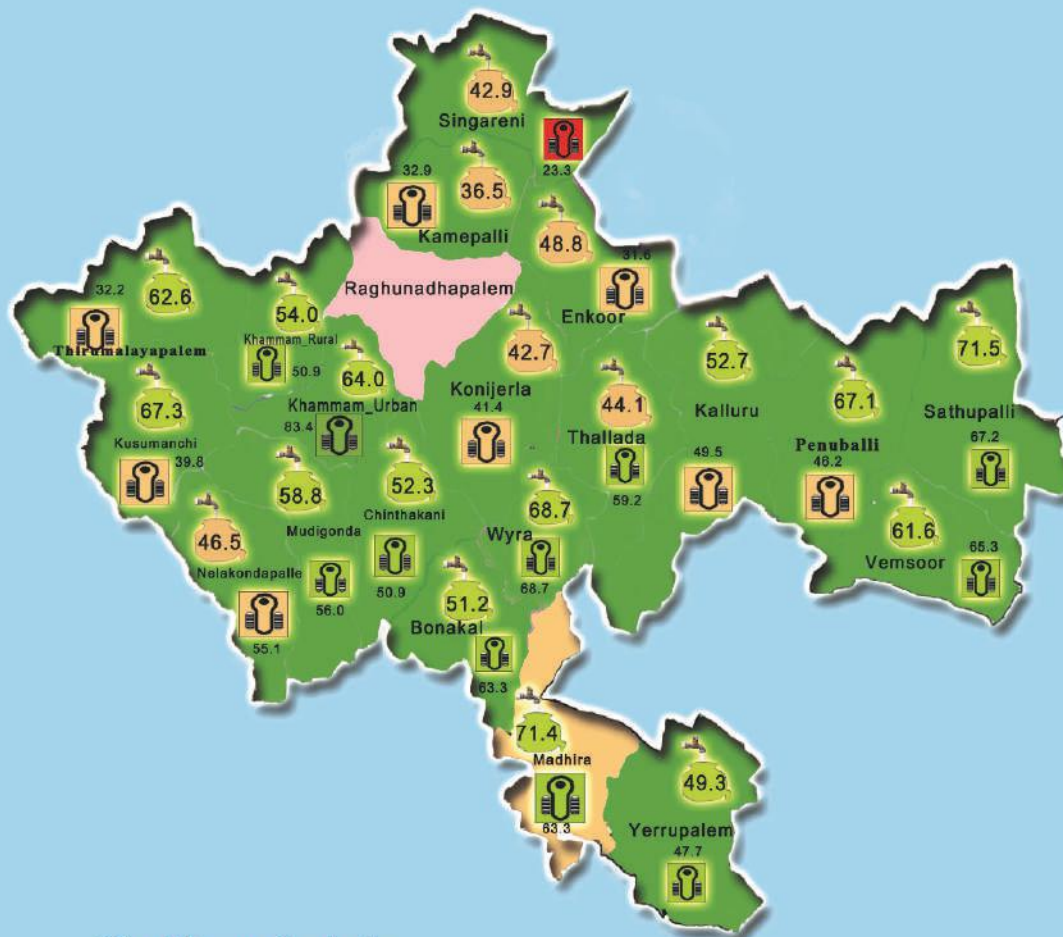


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.9: Khammam District

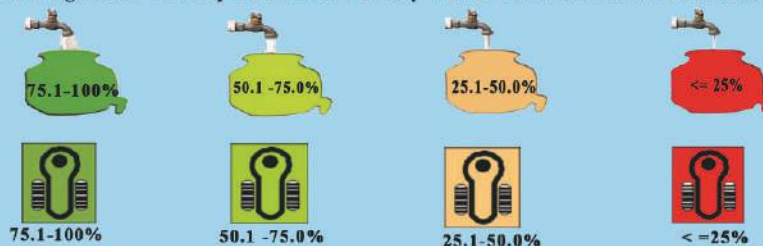
Mandal-wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



### Drinking Water Facility and Toilet Facility within the Premises of the Households





# Map 7.10: Komaram Bheem District

Mandal - wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



Not Deprived



Highly Deprived



Extremely Deprived



Data Not Available for all Categories

### Drinking Water Facility and Toilet Facility within the Premises of the Households



75.1-100%



50.1-75.0%



25.1-50.0%



<= 25%



75.1-100%



50.1-75.0%



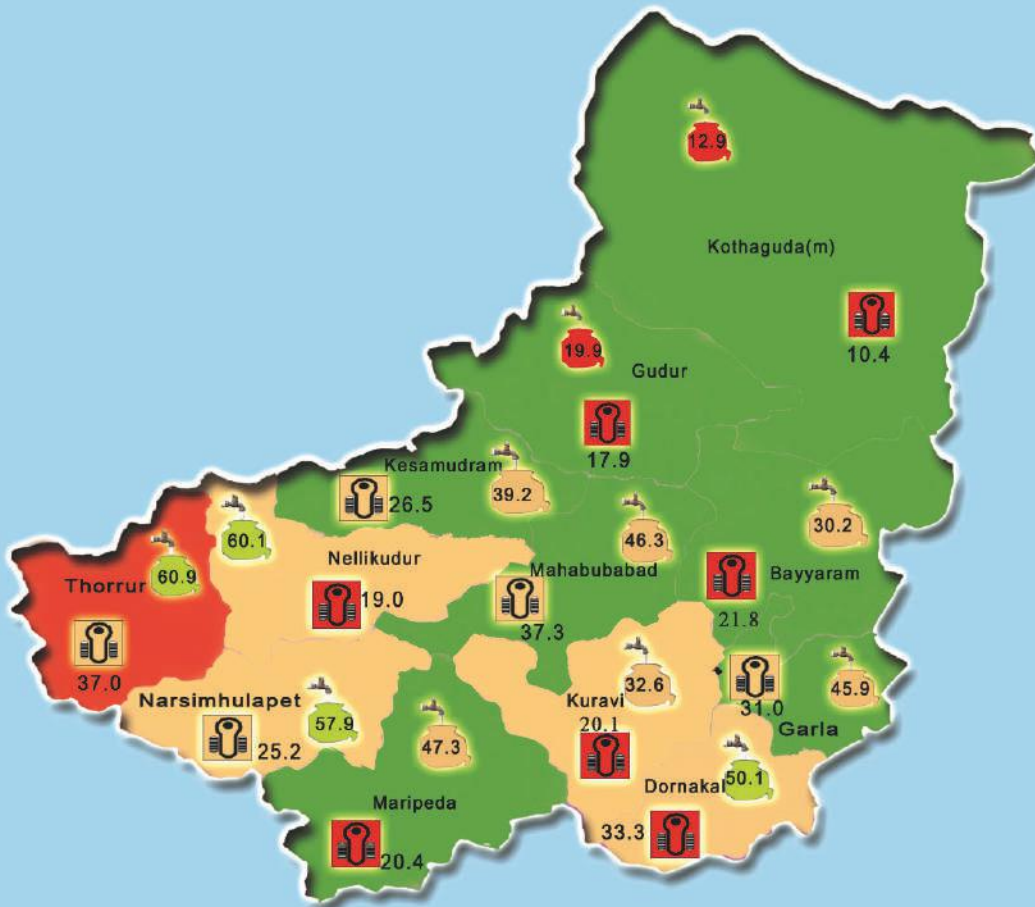
25.1-50.0%



<= 25%

# Map 7.11: Mahabubabad District

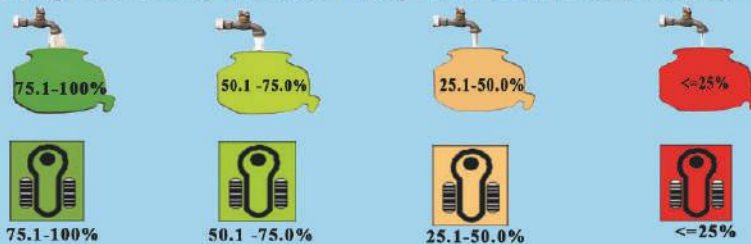
Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

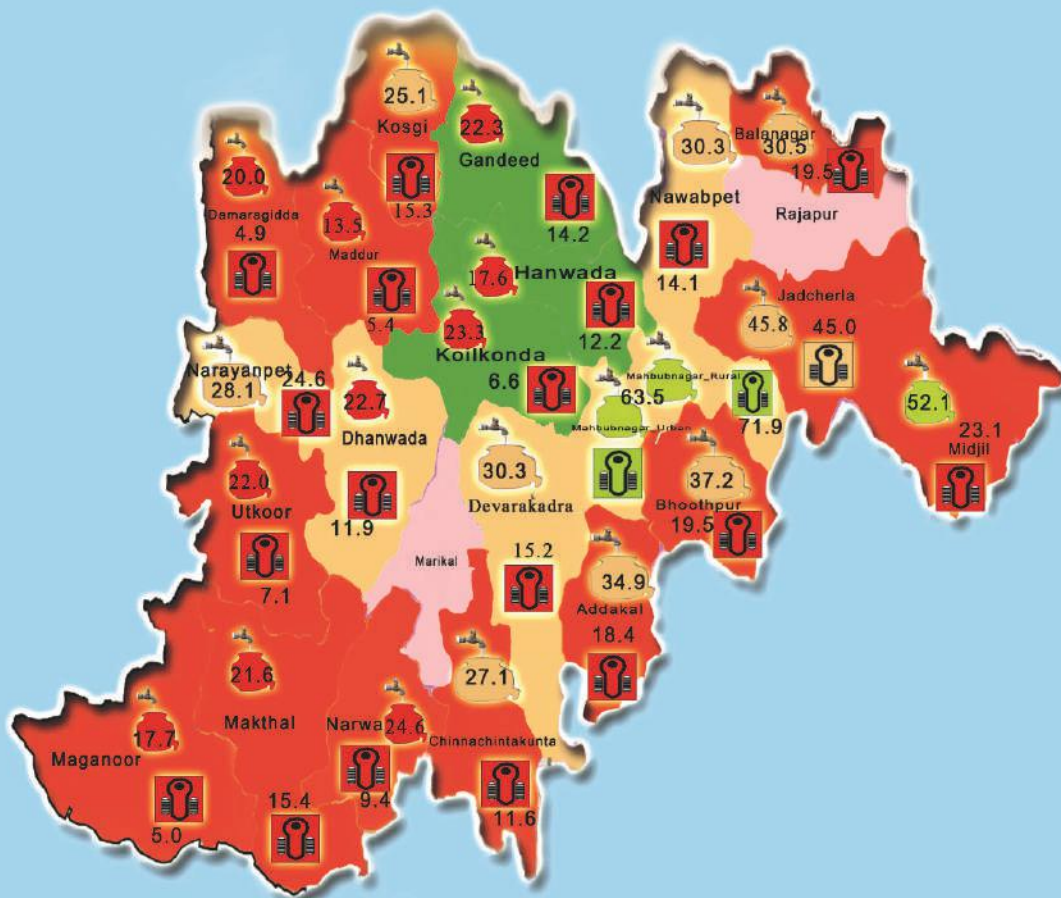


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.12: Mahbubnagar District

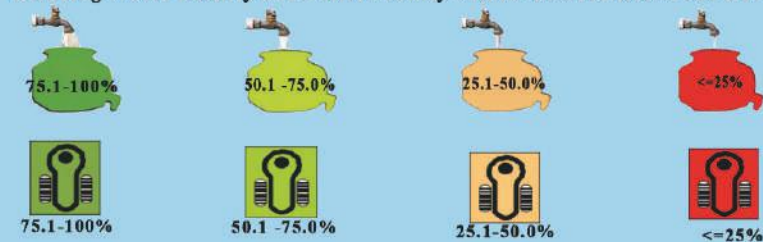
Mandal-wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



### Drinking Water Facility and Toilet Facility within the Premises of the Households





# Map 7.13:Mancherial District

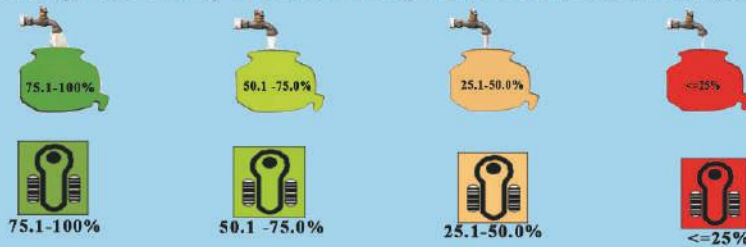
Mandal - wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

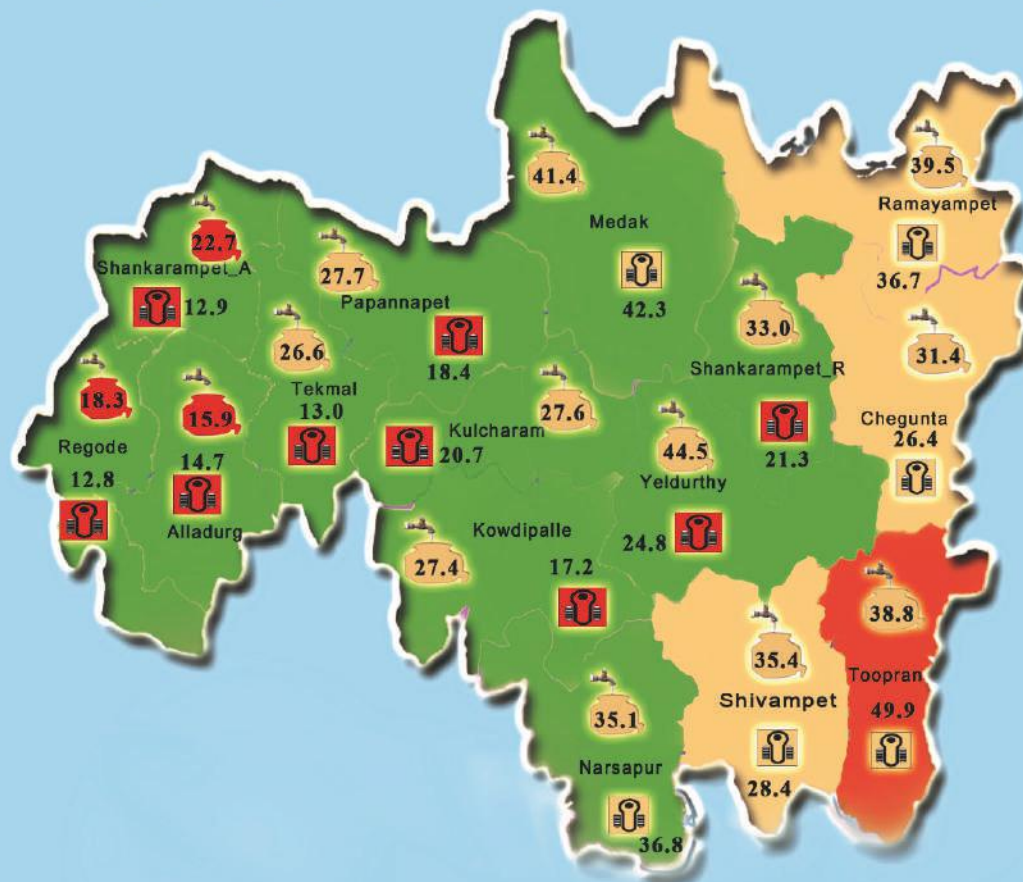


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.14: Medak District

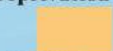
Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



Not Deprived



Highly Deprived

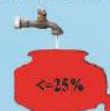


Extremely Deprived



Data Not Available for all Categories

### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.15: Medchal/Malkajgiri District

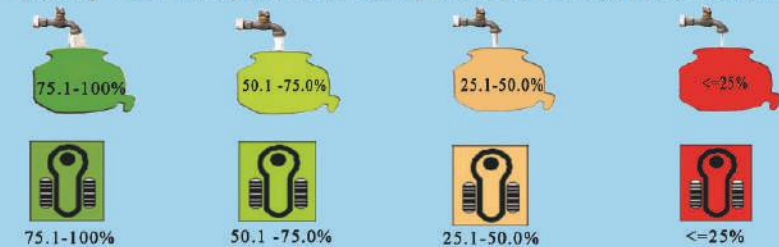
Mandal - wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



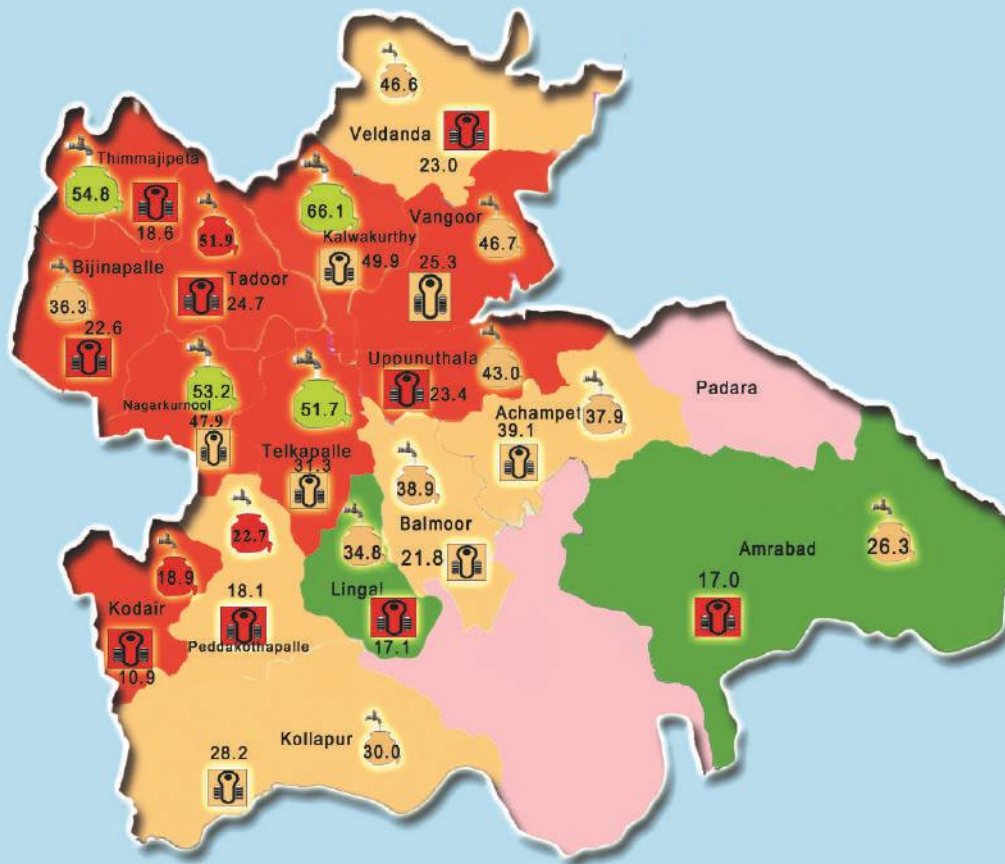
### Drinking Water Facility and Toilet Facility within the Premises of the Households





# Map 7.16: Nagarkurnool District

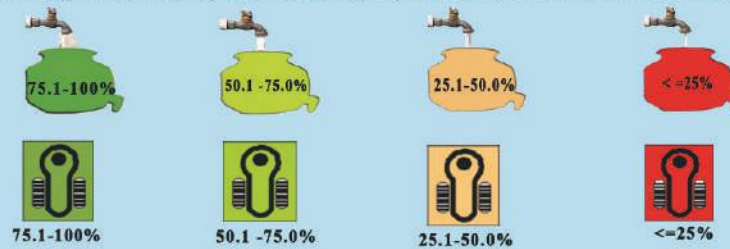
Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



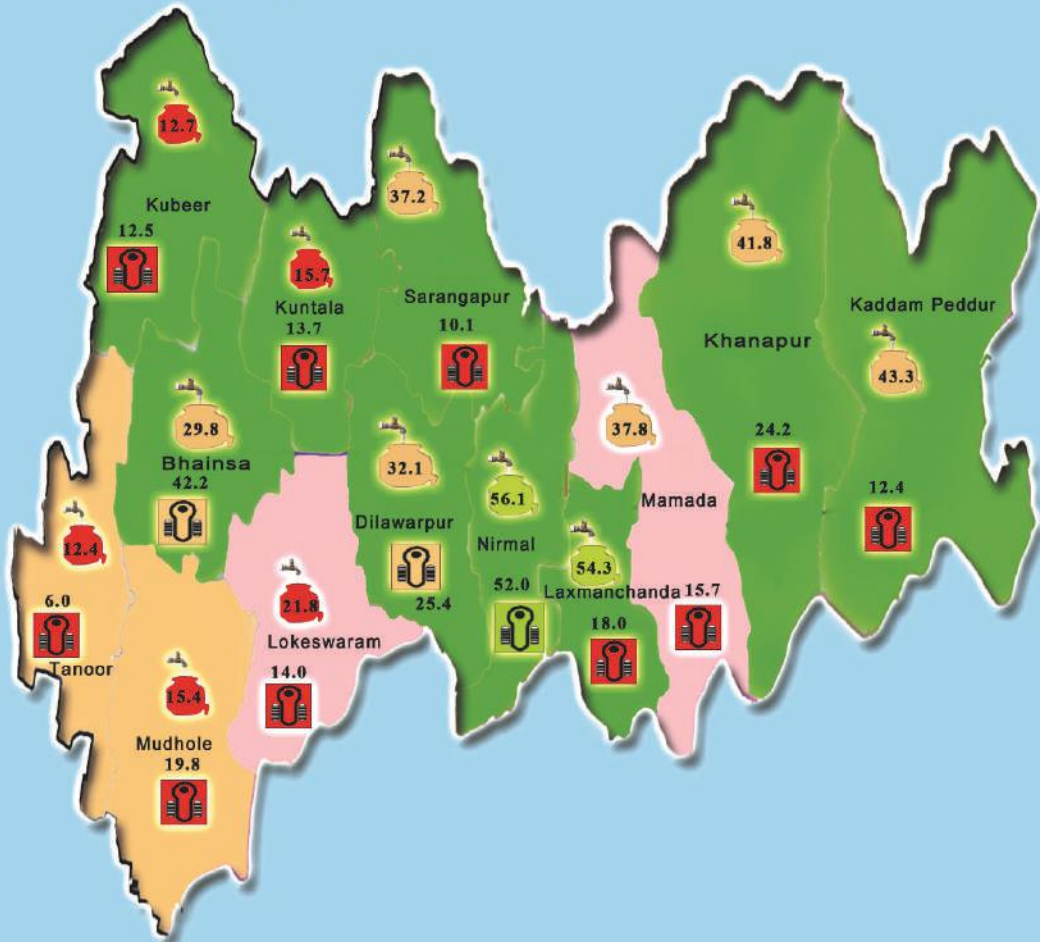
### Drinking Water Facility and Toilet Facility within the Premises of the Households





# Map 7.18: Nirmal District

Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



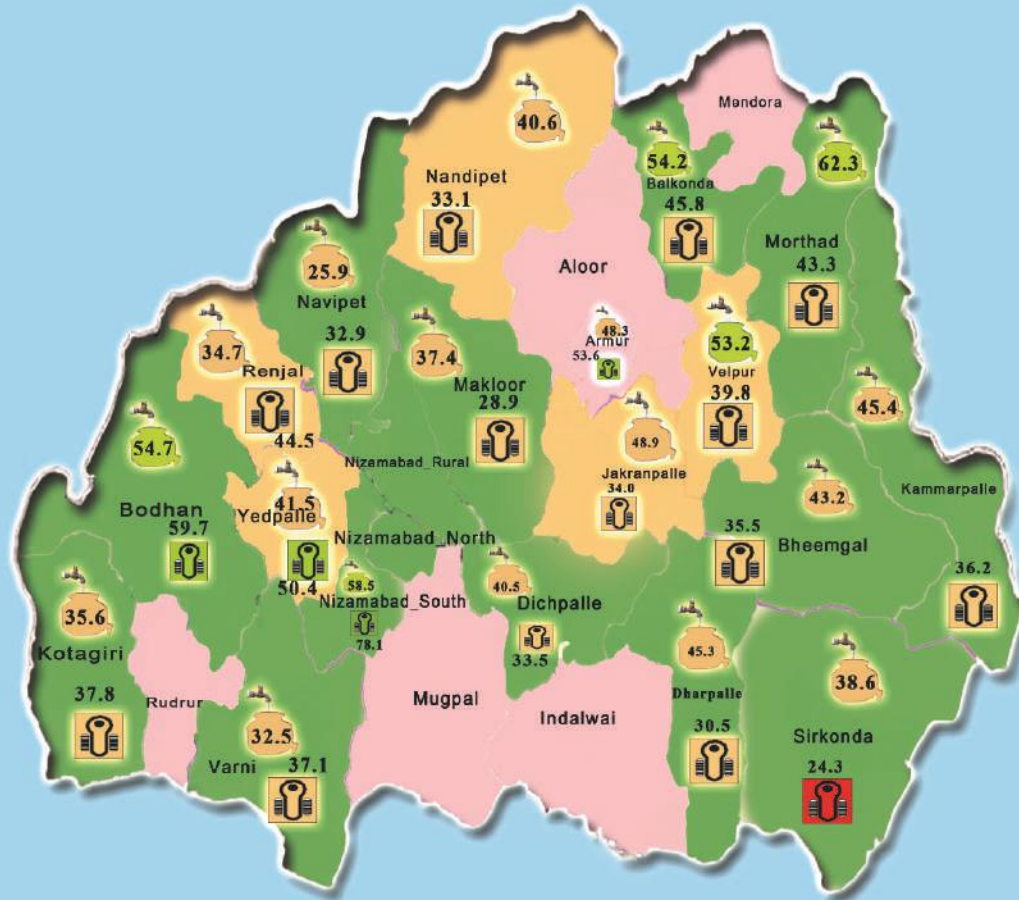
### Drinking Water Facility and Toilet Facility within the Premises of the Households





# Map 7.19: Nizamabad District

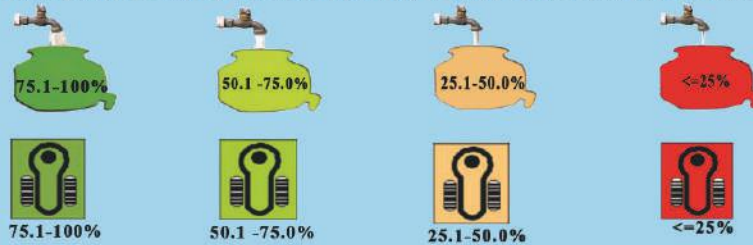
Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

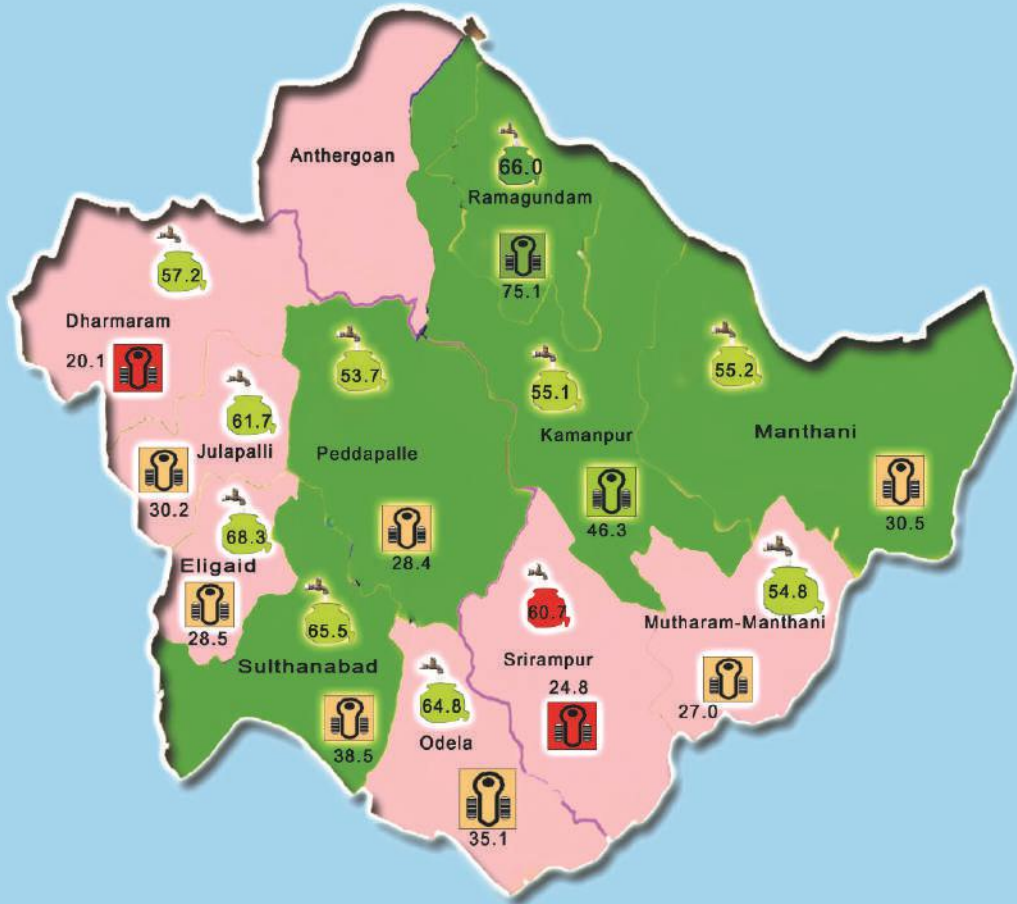


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.20: Peddapalli District

Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

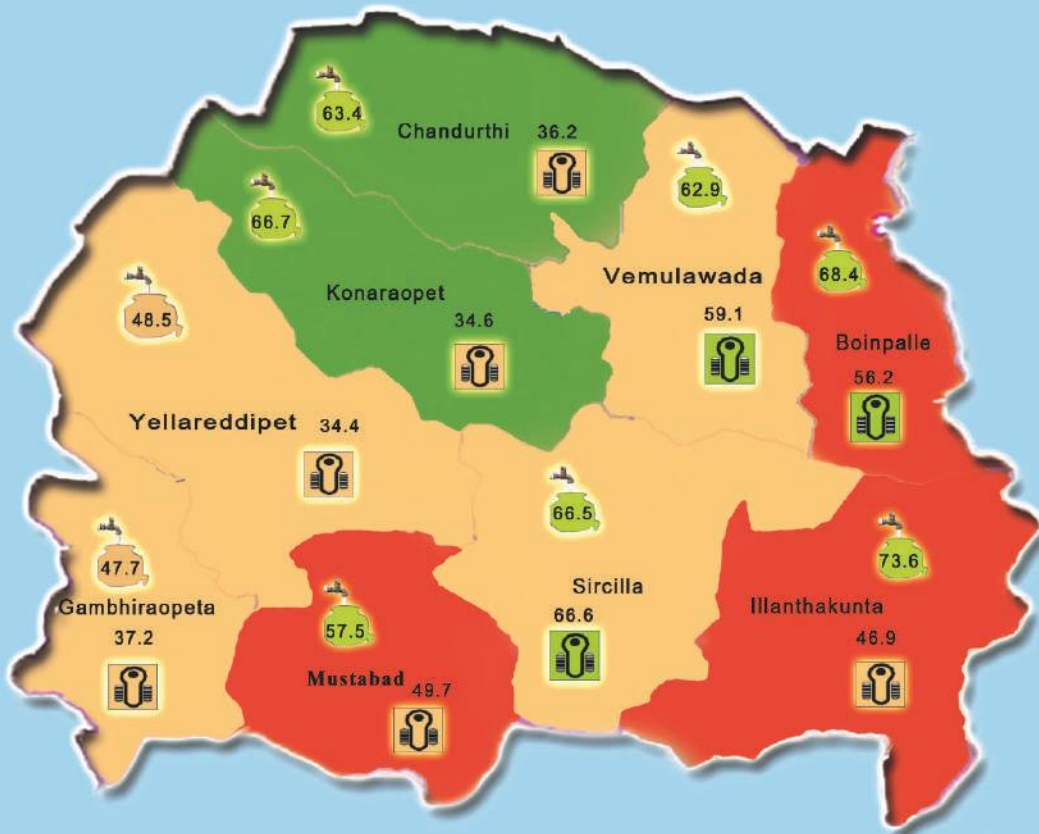


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.21: Rajanna District

Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



Not Deprived



Highly Deprived



Extremely Deprived



Data Not Available for all Categories

### Drinking Water Facility and Toilet Facility within the Premises of the Households



75.1-100%



50.1-75.0%



25.1-50.0%

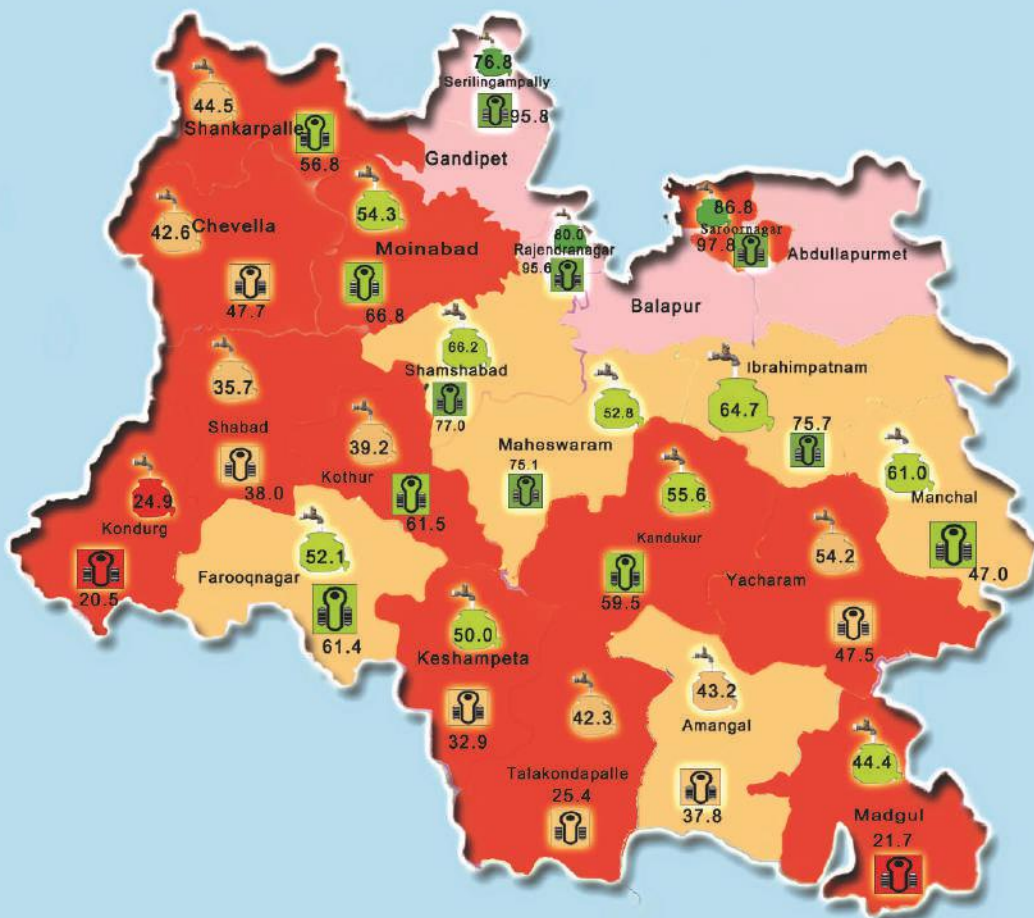


<=25%



# Map 7.22:Ranga Reddy District

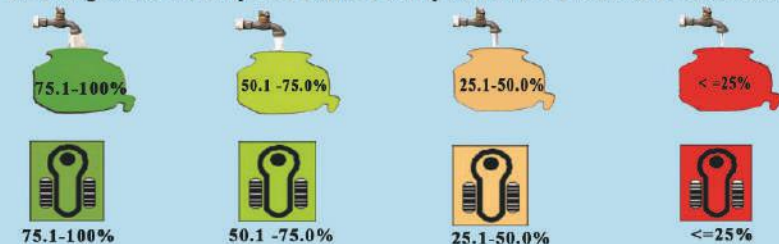
Mandal - wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

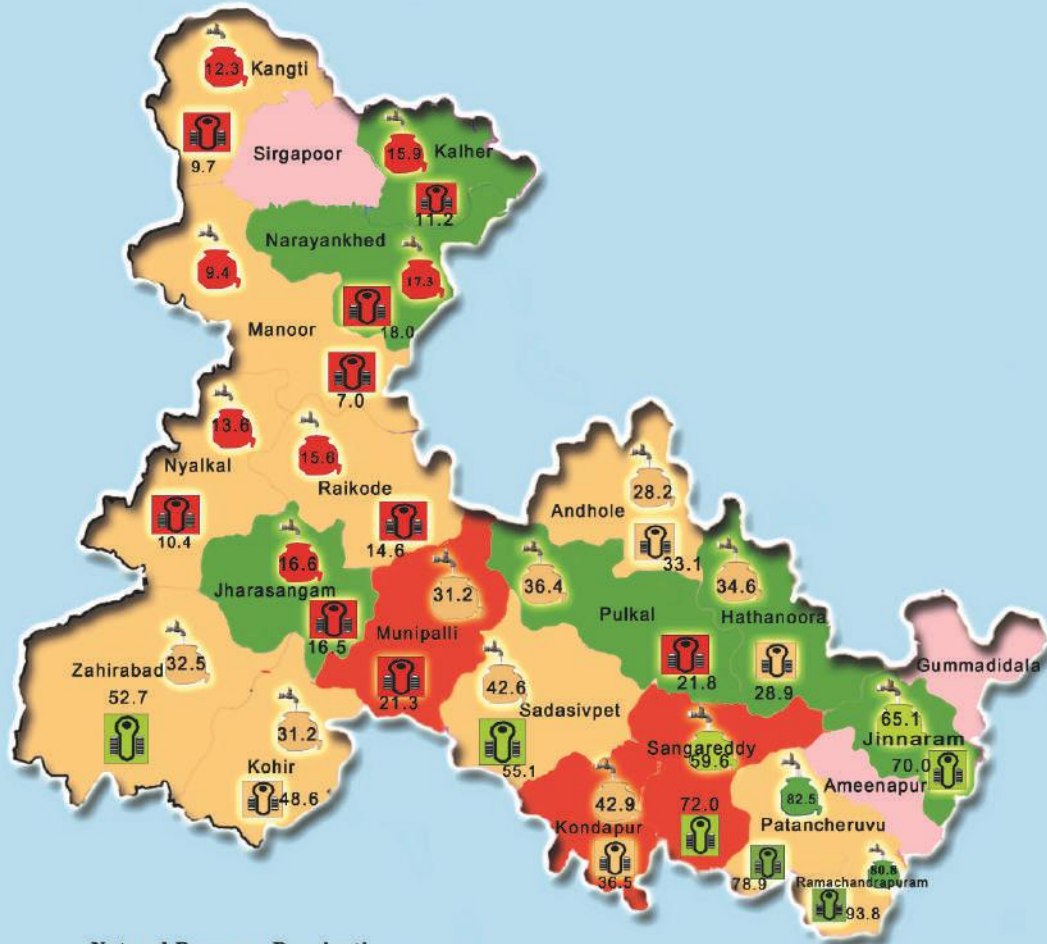


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.23: Sangareddy District

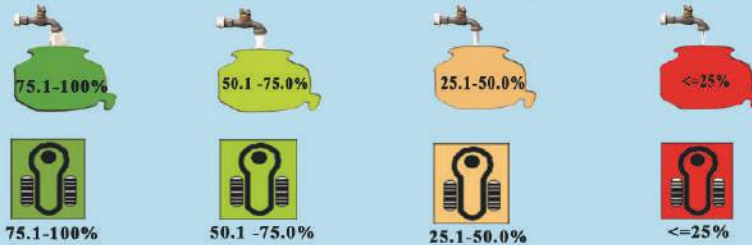
Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

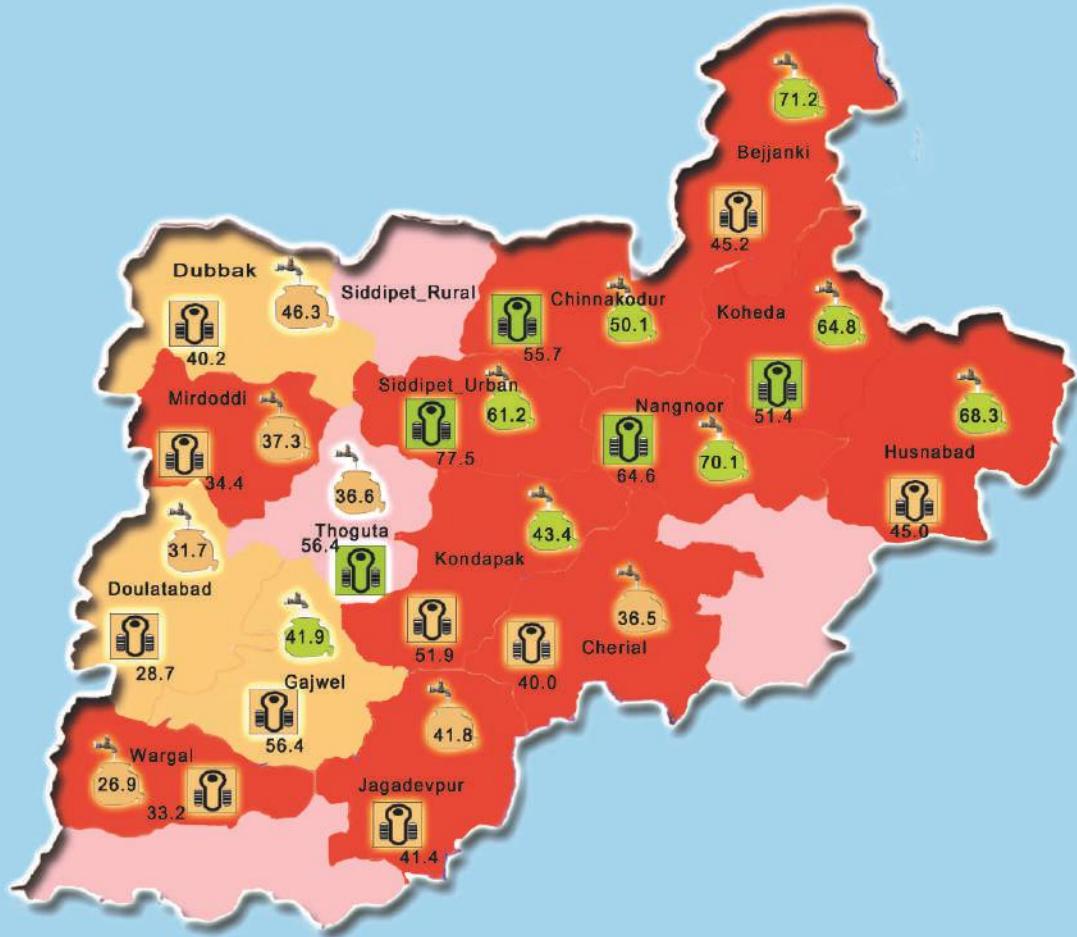


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.24: Siddipet District

Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



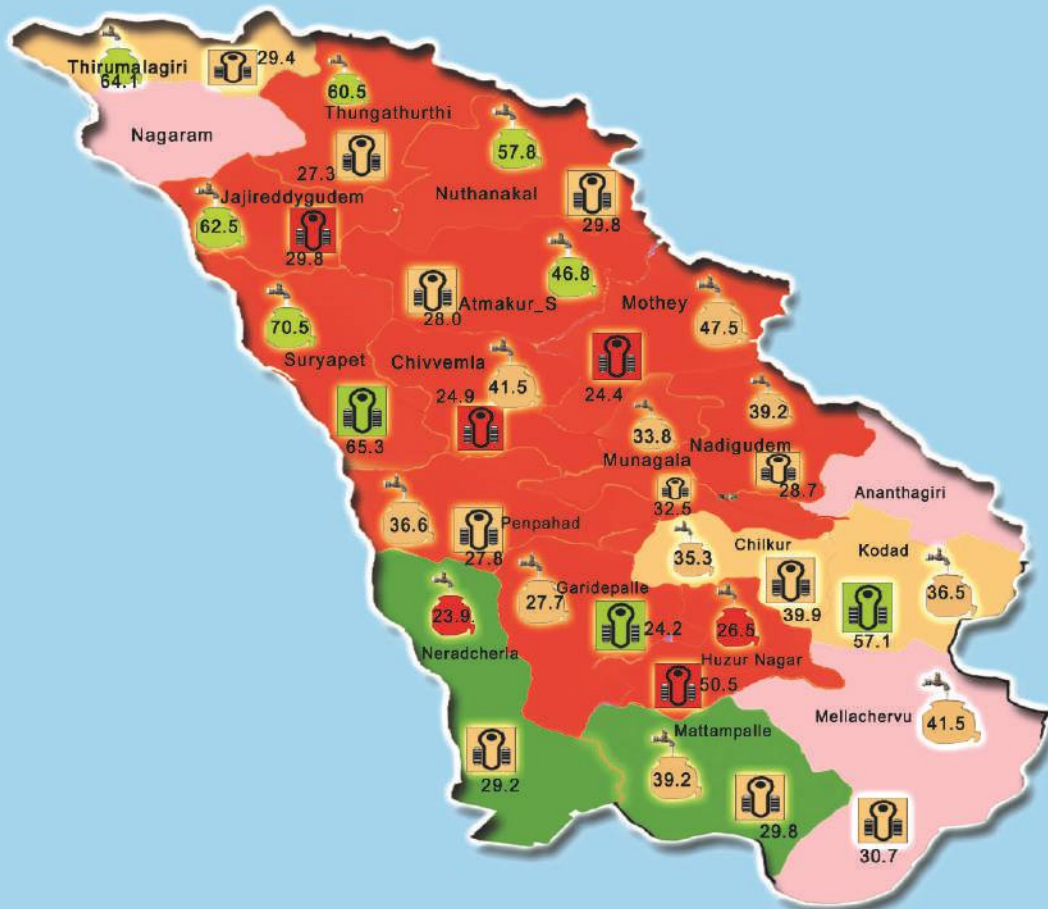
### Drinking Water Facility and Toilet Facility within the Premises of the Households





# Map 7.25: Suryapet District

Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

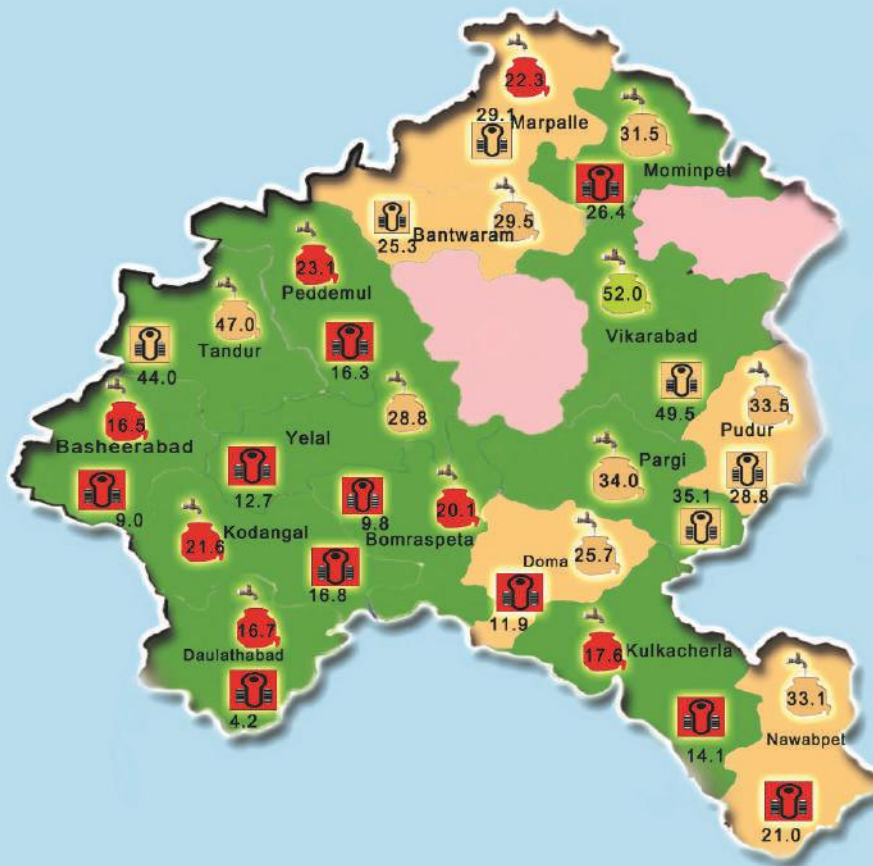


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.26: Vikarabad District

Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.27:Wanaparthy District

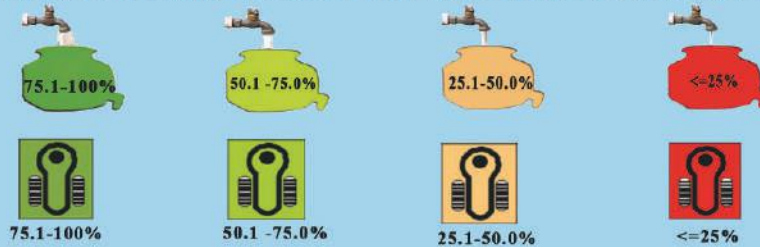
Mandal-wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



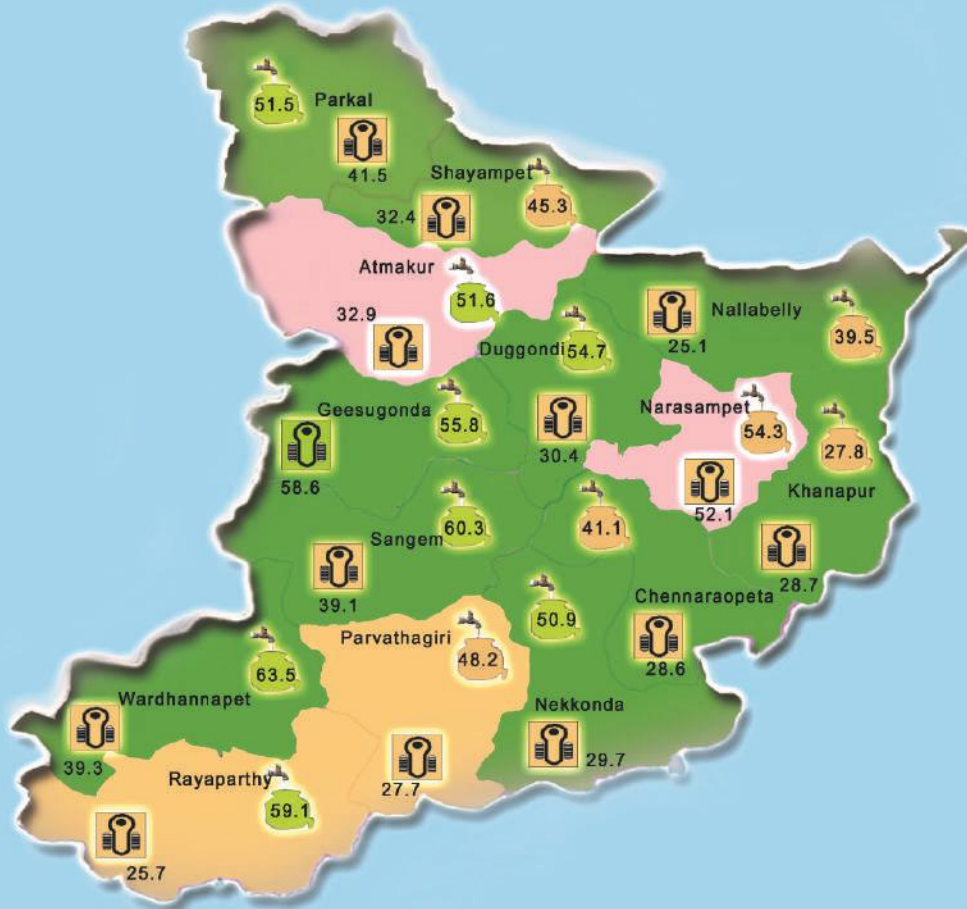
### Drinking Water Facility and Toilet Facility within the Premises of the Households





# Map 7.28: Warangal-Rural District

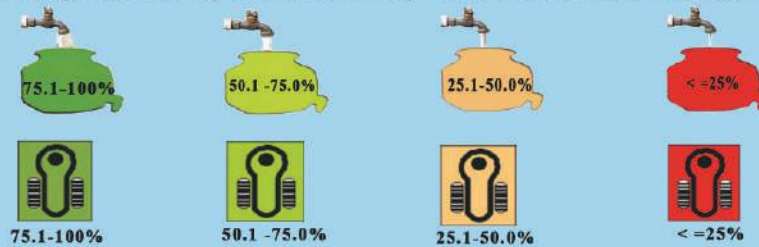
Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

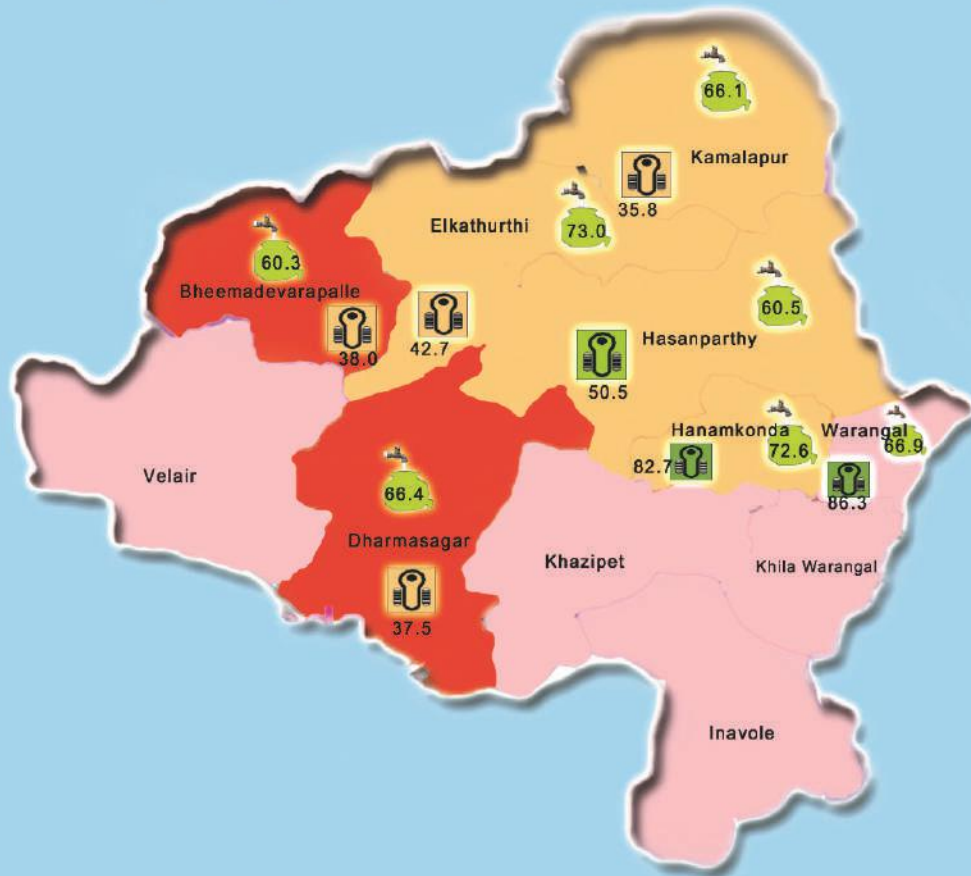


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.29: Warangal-Urban District

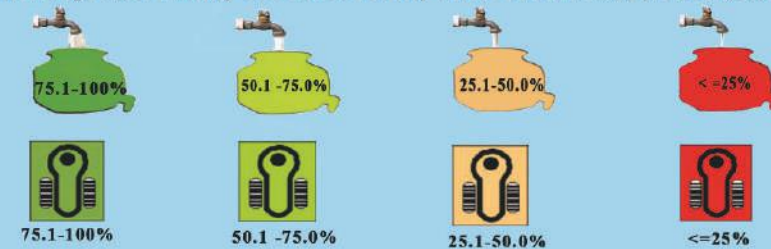
Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation

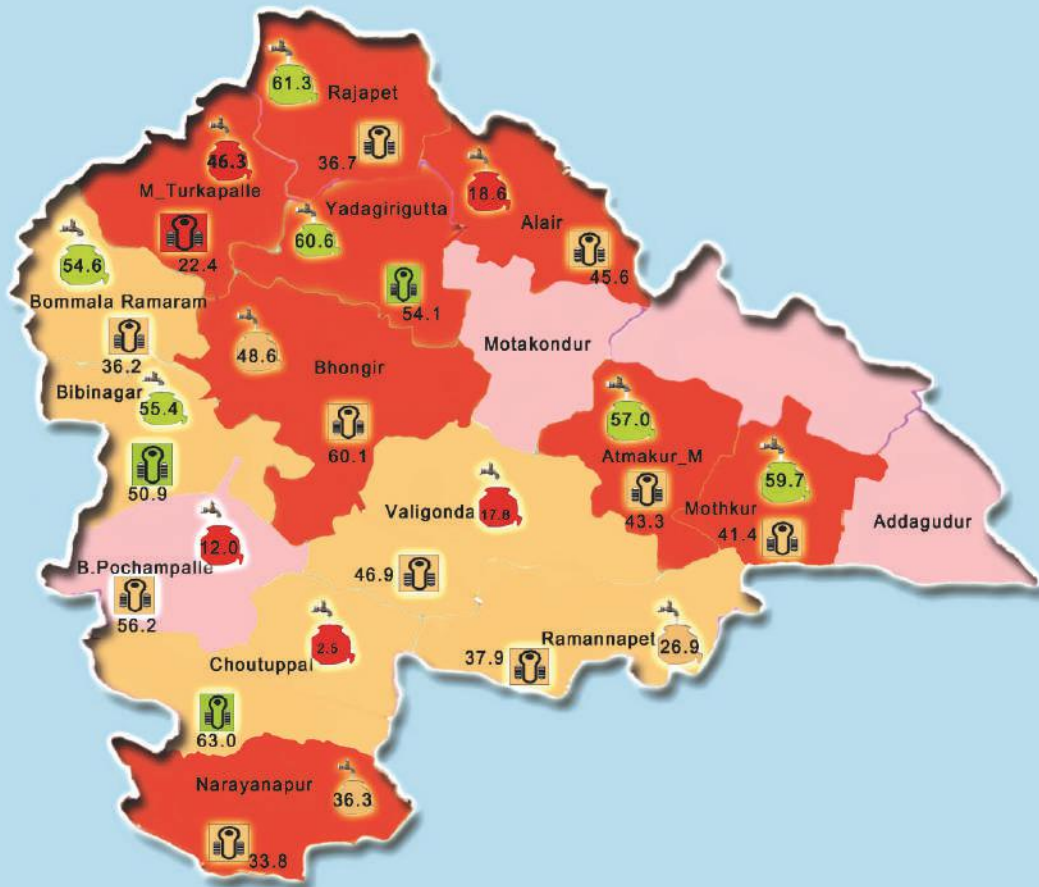


### Drinking Water Facility and Toilet Facility within the Premises of the Households



# Map 7.30: Yadadri District

Mandal- wise Natural Resource Deprivation and % of Households having Drinking Water and Toilet Facilities within the Premises



### Natural Resource Deprivation



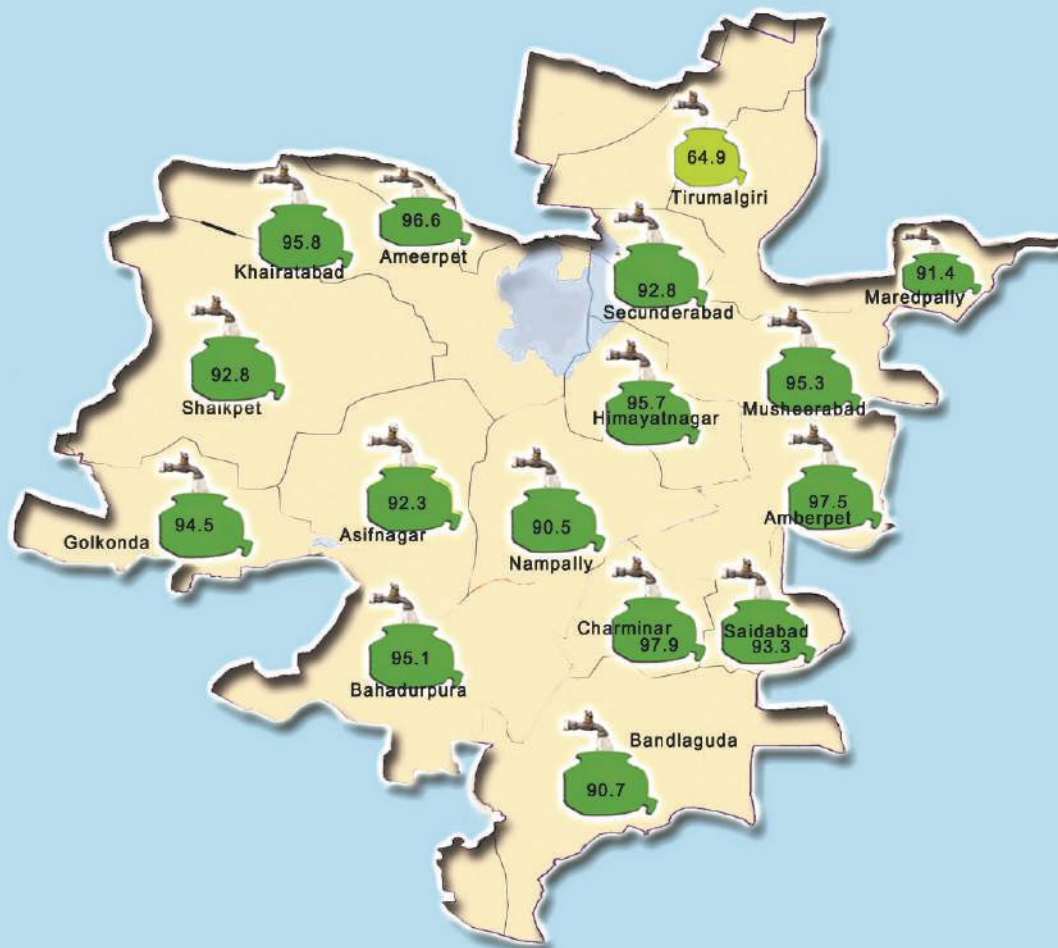
### Drinking Water Facility and Toilet Facility within the Premises of the Households





# Map 7.31-A: Hyderabad District

Mandal-wise % of Households having Drinking Water Facility within the Premises

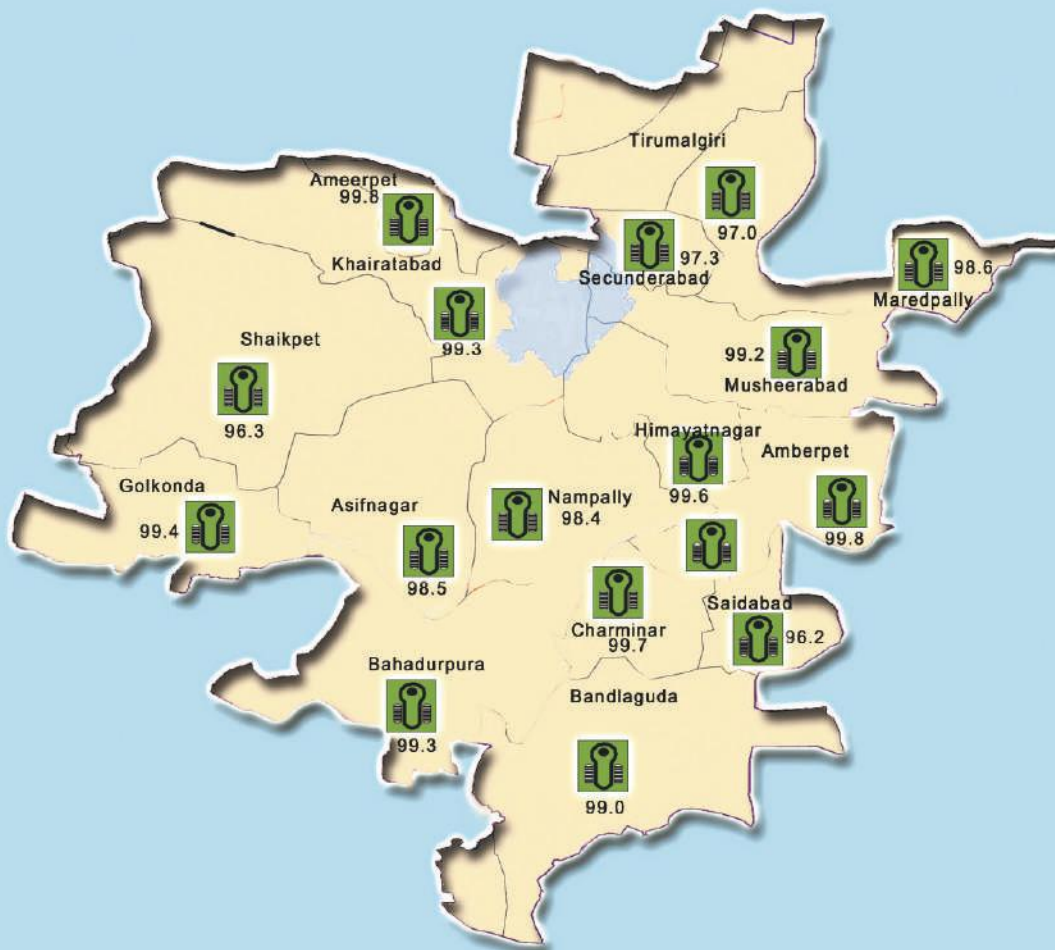


Drinking Water Facility within the Premises of the Households



# Map 7.31-B: Hyderabad District

Mandal-wise % of Households having Toilet Facility within the Premises



## Toilet Facility within the Premises of the Households



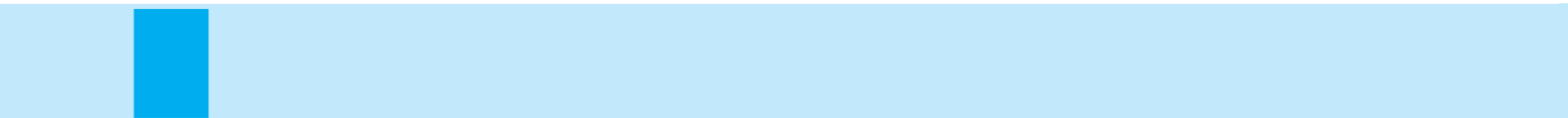
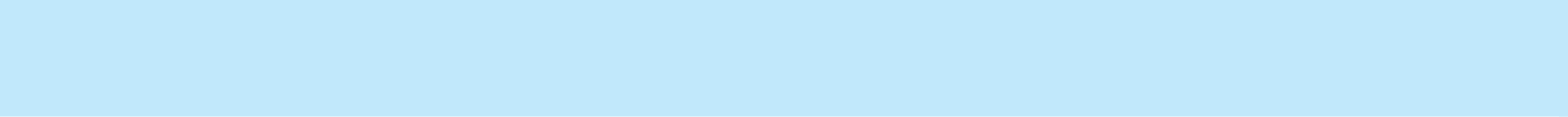
## References

- ASER (2014): *Annual Status of Education Report (Rural) 2014*, ASER, New Delhi, <http://www.asercentre.org>
- Azim Premji Foundation (2010): *Issues in Elementary Education 2010*, Bangalore, [www.azimpremjifoundation.org](http://www.azimpremjifoundation.org)
- CESS (2016): *Deciphering the Determinants and Impacts of Raising Rates of Caesarean Section and Offering Potential Solutions*, Division for Child Studies, Centre for Economic and Social Studies and UNICEF, Hyderabad
- CESS (2016): *Concurrent Monitoring of Selected ICDS Centres in Telangana State - Monitoring Results for Equity System with Special Focus on Nutrition*, Division for Child Studies, Centre for Economic and Social Studies, Hyderabad
- CESS (2015): *Human Development in Telangana State: District Profiles*, Centre for Economic and Social Studies, Hyderabad
- CESS (2012): *Andhra Pradesh Human Development Report-2*, unpublished, Centre for Economic and Social Studies, Hyderabad
- CESS (2008): *Human Development Report 2007: Andhra Pradesh*, Centre for Economic and Social Studies, Hyderabad
- CGG-COI (2016): *Sample Survey Conducted by Centre for Good Governance for Commission of Enquiry on Socio-Economic and Educational Conditions of Muslims*, Government of Telangana
- Chaudhury, N., Hammer, J., Kremer, M., Muralidharan, K., & Rogers, H. (2006): "Missing in action: teacher and health workers absence in developing countries", *Journal of Economic Perspectives*, Vol.20
- District Information System for Education (DISE) (2011-12): <http://www.dise.in>
- District Level Household & Facility Survey (DLHS-4) (2012-13): *Telangana*, Ministry of Health and Family Welfare, Government of India, New Delhi and International Institute of Population Sciences, Mumbai
- Galab, S and P. Prudhvikar Reddy (2015): "Patterns and Determinants of Transition in Stunting among Younger Children in Andhra Pradesh-An Analyses based on Longitudinal Data", in Mishra R.K. and Ananda Kundy (eds.), *The Indian Social Sector: Trends and Issues*, Institute of Public Enterprise and Academic Foundation, New Delhi
- Galab, S, P. Prudhvikar Reddy and V. N. Reddy (2014): *Classroom Process Teacher Ability and Student Performance: Evidence from School Based Component of Young Lives in Undivided Andhra Pradesh*, Working Paper No. 134 June 2014, Centre for Economic and Social Studies, Hyderabad
- Galab, S, P.Prudhvikar Reddy and V.N. Reddy (2013): *Primary Schooling in Andhra Pradesh-Evidence from Young Lives School Based Component*, Monograph No.31, Centre for Economic and Social Studies, Hyderabad
- Galab, S, P.Prudhvikar Reddy and Renu Singh (2014): *Round 4 Fact Sheets, Young Lives Study, 2014*, Centre for Economic and Social Studies, Hyderabad
- Galab, S and P. Prudhvikar Reddy (2013): *Food Prices and Child Nutrition in Andhra Pradesh*, Working Paper No.125, May 2013, Centre for Economic and Social Studies, Hyderabad
- Galab, S, Charlotte Jones, Michael Latham, Richard Churches (2013): *Community-based accountability for school improvement- A case study from rural India: 2013*, CFBT Education Trust Government of India (2005): *National Commission on Macroeconomics and Health*, Ministry of Health and Family Welfare, New Delhi
- Health Management Information System (HMIS) (2013-14): *Ministry of Health and Family Welfare*, Government of India, New Delhi
- Irudaya Rajan, S, P Mohanachandran Nair, K L Sheela, Lalitendu Jagatdeb and Nihar Ranjan Mishra (2008): *Infant and Child Mortality in India: District Level Estimates*, New Delhi: Population Foundation of India
- Jose, Shyma (2014), *Poverty and Malnutrition Linkages: An Analysis of Gender, Caste, Ethnicity and Religious Group*, unpublished M.Phil Thesis submitted to Jawaharlal Nehru University, New Delhi

- Kanakalatha Mukund and B.Syama Sundari (Unpublished): *Handloom Weaving in Telangana in dire straits*, inputs from Field Survey conducted in 2013-14
- Liza Benny, S. Galab, A. Georgiadis, P. Reddy (2014): "Growth trajectories among children in Andhra Pradesh, India: Patterns, Determinants and Implications for Cognitive Development", paper presented in *Two Day National Seminar on Applications of Panel Data, 53<sup>rd</sup> Annual Conference of the Indian Econometric Society (TIES)* held in Centre for Economic and Social Studies, Hyderabad, 25th-26th March 2014
- Morrow Virginia and Emma Wilson (2014): *Parents' Perspective on Quality of Schooling in Andhra Pradesh, India*, Young Lives/Save the Children, Oxford
- Murthy, S.R and P. Satya Sekhar, (2012): *Evidence to Guide the Development of Social and Behavior Change Communication Strategy for Maternal and Child Health and Nutrition in Andhra Pradesh, Hyderabad*, National Rural Health Mission, Government of Andhra Pradesh, UNICEF
- Narayana, K.V (2009): "Public and Private Mix in Medical Care: Changing Patterns in Andhra Pradesh" in S Mahendra Dev, C Ravi and M Venkatanarayana (ed.), *Human Development in AP Experiences – Issues and Challenges*, CESS, Hyderabad
- Narayana, K V (2003): "Size and Nature of Healthcare System" in C H Hanumantha Rao and S Mahendra Dev (ed.), *Andhra Pradesh Development: Economic Reforms and Challenges Ahead*, Centre for Economic and Social Studies (CESS), Hyderabad
- National Family Health Survey (NFHS-4) (2015-16): *State Fact Sheets* downloaded from the NRHM website of Ministry of Health and Family Welfare, Government of India, New Delhi
- National Family and Health Survey-4 (2015): *State Fact Sheet-Telangana*, Ministry of Health and Family Welfare, Government of India, New Delhi and International Institute of Population Sciences, Mumbai
- National Family Health Survey (NFHS-4, 2015-16) *District Fact Sheets*, downloaded from the NRHM website of Ministry of Health and Family Welfare, Government of India, New Delhi
- National Family Health Survey (NFHS-3) (2005-06): India 2005-06, Andhra Pradesh 2008, Ministry of Health and Family Welfare, Government of India, New Delhi and International Institute of Population Sciences, Mumbai
- NSSO (2014), *Social Consumption-Health*, National Sample Survey Organisation, 71<sup>st</sup> Round
- Rangarajan, C (2014): "Economic Growth and Social Development-Synergic or Contradictory", *CESS Foundation Day Lecture*, CESS, Hyderabad
- Rao, C.H.H. (2015): "Inaugural Address", *National Seminar on Labour Market and Issues of Adivasis in India*, held at National Institute of Rural Development and Panchayati Raj, Hyderabad on January 22-23, 2015
- Rao, C.H.H (2014): "The New Telangana State: A Perspective for Inclusive and Sustainable Development", *Economic and Political Weekly*, Vol.49 (9)
- Rao C.H.H. (2014): "Inaugural Address", *National Seminar on Economic Growth and Marginalised Groups: A Search for Inclusive Policy*, held at the School of Economics, University of Hyderabad, Hyderabad, March 24, 2014, Published in *Mainstream*, Vol.L11 No.38, September, 2014
- Ranis, Gustav (2004): *Human Development and Economic Growth*, Centre Discussion Paper No.887, Economic Growth Centre, Yale University, New Haven, downloaded from [http://www.econ.yale.edu/growth\\_pdf/cdp887.pdf](http://www.econ.yale.edu/growth_pdf/cdp887.pdf), accessed on August, 2016
- Ranis, Gustav, Frances Stewart and Alejandro Ramires (2000): "Economic Growth and Human Development", *World Development*, Vol. 28, No. 2
- Revathi E (forthcoming): "*Growth Path of Telangana Economy 1960-2014*", Centre for Economic and Social Studies, Hyderabad
- Revathi E (2017): "Small Holder Agriculture, Women Farmers and Sustainability: Scenario in Telangana" Paper Presented at the Workshop on *Playing Development Roles: Political Ecology of Performance in South Asia Agricultural Development* held during 27-29 April 2017 at Heidelberg, Germany



- Roy S., and D. Ophori (2012): "Assessment of Water Balance of the Semi-Arid Region in Southern San Joaquin Valley California using Thornthwaite and Mather S Model", *Journal of Environmental Hydrology*, Vol. 29, November 20
- Ravallion, Martin (1997): "Good and Bad Growth: The Human Development Reports", *World Development*, Vol. 25, No. 5
- Registrar General of India (2011-13): *Maternal Mortality Ratio Bulletin-2011-13* Sample Registration System Bulletin (2016): *Registrar General, India*, Vol.50 (2), December,2016
- Sample Registration System Bulletin (2015): *Registrar General, India*, Vol.50 (1), July, 2016
- Satya Sekhar, P., Uma Devi, V., Rajeswari, N.V., and Rao, Ch.V.S (2007): *Baseline Survey on Reproductive and Child Health (RCH-II) in Andhra Pradesh*, Indian Institute of Health and Family Welfare, Hyderabad
- Singh Abhijeet, Alber Park, and Stefan Dercon (2014): "School Meals as a Safety Net: An Evaluation of the Mid-Day Meal Scheme in India", *Economic Development and Cultural Change*, Vol.62 No.2
- Singh Renu (2017): *Country Report on Education, the evidence from Longitudinal Study of Young Lives*, forthcoming, Young Lives Country Office, New Delhi
- S Mahendra Dev and Sreedevi, N (2011), "Patterns in Social Sector Expenditures: Pre- and Post-Reform Period" in Praveen Jha (ed), *Towards Progressive Fiscal Policy in India*, Sage Publications
- S Mahendra Dev and Sreedevi, N (2009): "Social Sector Expenditure in Andhra Pradesh", in S. Mahendra Dev et.al (Eds) (2009): *Human Development in Andhra Pradesh: Experiences, Issues and Challenges*, Centre for Economic and Social Studies, Hyderabad
- Thornthwaite, C.W. and J.R. Mather(1957): "Institutions and tables for computing potential evapotranspiration and the water balance: Ceteron, N.J. Laboratory of Climatology", *Publications in Climatology*, Vol. 10, No.3
- Thornthwaite, C.W. and J.R. Mather(1955): "The Water Balance, Centeron, N.J., Laboratory of Climatology", *Publications in Climatology*, Vol. 8, No.1
- UNDP (2014): *Human Development Report2014: Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience*, UNDP, New York
- UNDP (2009): *Human Development Report-2009- Overcoming barriers: Human mobility and development*, UNDP, New York
- Woodhead Martin, Vennam Uma , Ames Patricia, Abebe Workneh and Streuli Natalia (2009): *Equity and Quality? : Challenges for Early Childhood and Primary Education in Ethiopia, India and Peru*, Working Papers in Early Childhood Development 55, The Hague, Bernard van Leer Foundation





Centre for Economic and Social Studies (CESS) has been working on growth, poverty and inequalities among spaces and social groups right from its inception.

In 2007, the Centre has brought out the first *Human Development Report 2007: Andhra Pradesh*. In this report, Human Development Index, Human Poverty Index, Gender Development Index and Empowerment Index have been estimated for 1993-94 and 2004-05. The levels, improvements and inequalities and related correlates for these indices have been analysed to provide policy inputs. This was prepared under the guidance of Prof. CH. Hanumantha Rao and Prof. S. Mahendra Dev, the then Chairman and Director respectively.

In 2012, the Centre prepared the second report titled *Human Development Report-2: Andhra Pradesh* to assess the human development scenario after 2004-05. This was prepared under the guidance of Prof. K.L.Krishna and Prof. Manoj Panda, the then Chairman and Director respectively.

The present *Human Development Report 2017: Telangana State* is the first report for the state of Telangana. This report benchmarks the patterns of Human Development across the districts, rural and urban areas, caste groups, gender groups and occupational groups in Telangana. This enables the State Government to monitor the progress of human development in the State. It has also brought out clearly the ways and means to bring improvements in human development and reduction in its inequalities. This is prepared under the guidance of Prof. CH.Hanumatha Rao, Founder-Member and Honorary Professor, CESS and Prof. R.Radhakrishna, Chairman, CESS.



**CENTRE FOR ECONOMIC AND SOCIAL STUDIES**

Begumpet, Hyderabad - 500016, Telangana State, INDIA.

Tel No: +91-40-2340 2789, 2341 6780, 2341 6610/11/12/13.

Fax: 91-40-2340 6808; [www.cess.ac.in](http://www.cess.ac.in), e-mail: [post@cess.ac.in](mailto:post@cess.ac.in)