

TELANGANA SOCIO ECONOMIC OUTLOOK 2021



Government of Telangana

**SOCIO
ECONOMIC
OUTLOOK
2021**

Planning Department



Preface

Every year, the Government publishes the Telangana Socio Economic Outlook reflecting on the Government's work over the previous year and the state's progress towards greater development. While this reflection is important for all governments, it is especially important for our young state: the foundations we lay today will shape generations to come. Therefore, the Telangana Socio Economic Outlook not only gives us a chance to report the state's achievements but also enables us to deliberate on opportunities ahead for further progress.

With this objective, this year's Socio Economic Outlook highlights the efforts of the entire Government in curbing the spread of COVID-19 while protecting lives and livelihoods. At the same time, the document also highlights the Government's emphasis on improving outcomes in each sector.

This volume includes analysis using Government data supplemented by external official data sources, such as publications of Government of India's National Sample Surveys, RBI, NITI Aayog etc. This analysis is interspersed with department updates but also featured in boxes that contain a few ideas being

implemented in other places or suggested by official publications and peer-reviewed articles. The intent of the Government regarding these ideas is to merely enable public deliberation and does not by any means convey a statement of intent, just as the Government of India does in its Economic Surveys.

Putting all this together required many months of labour. All departments across the Government have cooperated and submitted necessary information in a timely manner. The Planning Department and Centre for Effective Governance of Indian States (CEGIS), worked together seamlessly to bring out this publication, with ample state-specific analysis and visualisations to make this document insightful and engaging.

This document is expected to serve as a starting point for discourse around the state's development, especially in the aftermath of COVID-19, and in our journey towards a more prosperous Telangana.

**Planning Department
Government of Telangana**

Table of Contents

1. Overview	4
2. Macroeconomic Trends	10
2.1 Economic Growth	12
2.2 Sectoral Overview	15
2.3 District Domestic Product	18
2.4 Per Capita Income	18
2.5 Employment	21
3. Public Finance	22
3.1. Fiscal Impact of COVID-19.....	24
3.2. Comparative Fiscal Profile of Telangana.....	26
3.3 Implications of 15th Finance Commission	32
4. Agriculture	38
4.1 Importance of Agriculture	40
4.2 Inputs for Agriculture.....	42
4.3. Agriculture Outputs: Production and Yield	52
4.4. Access to Markets	57
4.5. Access to Finance	61
5. Industries	62
5.1 Role of Industry and Recent Trends	64
5.2 Major Initiatives to Promote Industry	66
5.3 Sectoral Spotlights	73
6. Services.....	80
6.1 Role of Services in Telangana and Recent Trends	82
6.2 Major Government Initiatives.....	82
6.3 Sectoral Spotlight - IT/ITeS.....	86
6.4 Sectoral Spotlight: Tourism.....	89
7. Infrastructure.....	92
7.1 Energy	94
7.2 Water Supply and Sanitation	98
7.3 Roads and Transport	99
7.4 Digital Infrastructure	103
8. Health	104
8.1 Introduction	106
8.2. COVID-19.....	106
8.3. Health Infrastructure	111
8.4. Non-Communicable and Communicable Diseases.....	113

9. Maternal and Child Care.....	118
9.1 Introduction	120
9.2 Maternal Health.....	121
9.3 Child Health	124
9.4 Nutrition.....	126
10. Education and Skill Development	136
10.1 Introduction.....	138
10.2 Preschool Education	138
10.3 School Education	138
10.4 Higher Education.....	151
10.5 Skill Development.....	153
10.6 Adult Education	155
11. Welfare.....	156
11.1 Introduction	158
11.2 Poverty Alleviation in Telangana.....	158
11.3 Gender Equality in Telangana.....	166
11.4 Welfare of Scheduled Castes, Scheduled Tribes, Backward Classes and Other Minorities.....	167
11.5 Welfare for Senior Citizens and the Disabled.....	171
12. Forestry and Environment	174
12.1 Introduction.....	176
12.2 Telangana's environment: Key indicators and trends.....	176
13. Panchayat Raj and Palle Pragathi	184
13.1 Panchayat Raj Act 2018: Implementation Status.....	186
13.2 Strengthening Functionary Performance.....	188
13.3 Enhancing Fund-Flow to PRIs.....	189
13.4 Palle Pragathi	189
13.5 Other Initiatives of PR&RD	192
14. Urban Development	194
14.1 Introduction.....	196
14.2 Urbanisation Trends	196
14.3 Urban Governance.....	196
14.4 Developing Hyderabad	202
14.5 Other initiatives	205
15. Governance.....	206
15.1 Decentralization: Bringing Government Closer to the People	208
15.2 Improving Citizen Experience.....	209
15.3 Law and Order.....	212
15.4 Towards Outcome-Oriented Governance	213
Annexures	217

Chapter 1: Overview

Across the world, 2020 was a challenging year for states and nations alike as they battled the COVID-19 pandemic. In India, state governments had the onerous responsibility of saving lives from COVID-19 while protecting livelihoods. The Government of Telangana has prudently balanced these two priorities. After a peak in September 2020, COVID-19 positive cases have steadily fallen. Of the 2.99 lakh positive cases reported in the state, 98.8% have recovered fully (as of February 2021). The state's death rate (0.5%) was lower than that of the rest of the country (1.4%). As per the Economic Survey 2020-21 of the Government of India, Telangana was amongst the three states to have saved the most lives in the country.

Similarly, Telangana's economy fared better than the Indian economy. In 2020-21, the state's economic growth in constant (2011-12) prices dropped to -1.26%, while national growth dropped to -8.0%. This relatively stronger performance in saving lives and livelihoods reflects the Government's proactive efforts in curbing the spread of COVID-19; the Government's sustained investment in governance, economic and social

policies; and the resilience of the people of Telangana.

Saving Lives

Telangana recorded its first case of COVID-19 on 2nd March 2020. Ever since, the state has been vigilant and all levels of Government have come together to curb the spread of the virus. The Government acted proactively and imposed a lockdown even before the Government of India's national lockdown. The Government used the lockdown not only to slow down the spread of the virus but also to prepare for the long-term COVID-19 battle. During the lockdown, the Government began engaging more healthcare workers and investing in dedicated COVID-19 infrastructure.

Since the first COVID-19 case, the Government has engaged 5,937 additional healthcare personnel and redeployed existing healthcare personnel to implement a state-wide 'test-track-treat' strategy. All Government personnel, ranging from doctors to Health Department officials to police personnel, worked tirelessly to contain the pandemic. In recognition of these efforts, the Government has provided the Chief

Minister's special incentive to frontline personnel.

The Government leveraged the state's strong health infrastructure to equip all major Government hospitals with oxygen beds, ventilators and PPE kits. The Gandhi Hospital in Secunderabad was designated as the nodal hospital for COVID-19 while 277 other hospitals across the state were designated as COVID-19 treatment hospitals. The existing buildings in the Gachibowli Sports Stadium were rapidly converted into a fully functional COVID-19 hospital named the Telangana Institute of Medical Science (TIMS), with a 1,224 bed capacity. In total, there are 8,114 beds in the state dedicated for COVID-19 treatment.

These initiatives enabled the Government to curb the spread of the virus and save lives. Telangana's positivity rate of 3.4% is significantly lower than that of the national rate of 5.1%. The Government continues to be vigilant on the threat of COVID-19 in view of the rising cases in a few states and is simultaneously focusing on vaccination. As a national and a global leader in vaccine production, the state is well-placed to roll out vaccines quickly, efficiently and safely. Hyderabad accounts for one third of the world's vaccine production and its role in the development and production of the COVID-19 vaccine is commendable.

Safeguarding Livelihoods

While responding to the public health challenge, the Government also had to tackle COVID-19's economic and welfare challenges. Across the world, the pandemic forced firms out of business and people out of jobs. In Telangana, the initiatives of the Government ensured that the disruption to major economic activity was minimized as much as possible. While strictly enforcing the lockdown and curfew during the crisis period, the Government continued to deliver essential services such as power, sanitation, water supply, medical care and essential commodities with minimal disruptions.

To shield farmer incomes from the COVID-19 crisis, the Government intervened to significantly enhance its procurement operations. This was especially

important since farmers had reaped a bumper crop in Rabi 2020. In total, Rs. 9,199 crore of paddy and Rs. 10,167 crore of cotton was procured in 2020-21. This helped farmers enormously in mitigating the impact of COVID-19.

To support MSMEs affected by the pandemic, the Government actively coordinated with banks and ensured that they received additional funding under AatmaNirbharBharat Abhiyan. The Government also helped the larger firms continue operations during the lockdown by taking steps to minimize disruption in production by ensuring uninterrupted power supply, enabling the mobility of employees through issuing passes and arranging logistic support. For example, the Government coordinated with three other state governments and ensured smooth shipment of aerospace giant Lockheed Martin's equipment to its destination, duly considering the geopolitical implications.

Taken together, the Government's efforts have meant that the economic impact of COVID-19 has been relatively muted. Economic growth in the state was affected less than India's economic growth while the rise in unemployment during the lockdown was also lower. As per unemployment data from the Centre for Monitoring Indian Economy, a research organization, unemployment in the country peaked at 21.7% in May 2020, however in Telangana the peak was only 14.7%.

Enhanced Social Protection and Welfare Programmes

Since the formation of the state, the Government has implemented a range of programmes to ensure the welfare of every citizen in the state. To protect the vulnerable sections against the impact of the COVID-19, the Government strengthened its social safety net and ensured that all existing programmes continued uninterruptedly. For instance, the Government increased the benefits delivered through the Public Distribution System. During the lockdown, rice and redgram dal was distributed to all the food security card holders free of cost from April to November 2020,

and financial assistance of Rs. 1,500 was transferred twice into the accounts of 81.8 lakh beneficiaries.

In spite of setbacks, the Government continued to implement key health schemes without disruption. The forced shutdown of schools, due to the pandemic, hindered children's learning, a crucial component for the state's development. In response, the Government implemented distance learning and e-learning programmes, by leveraging mobile phones, computers and TVs enabling children to learn from their homes. As a result, the majority of students in the state resumed learning, and the Government's digital literacy and internet access efforts greatly helped in mitigating the impact of school closures. Schools have now started to open for classes 6th and above while following all necessary precautions. As before school closures, the focus of the Government is on improving educational outcomes for all students, with an emphasis on foundational literacy and numeracy skills as highlighted in National Education Policy.

The Government's social protection efforts were not restricted to the state's residents. Across the country, migrant labourers suffered enormously because of COVID-19. The Government was one of the first state governments to provide significant relief to mitigate the plight of migrant labourers. During the lockdown, the Government instructed all the District Collectors, Commissioners, and the Greater Hyderabad Municipal Corporation to provide basic amenities such as food, water, shelter and medical assistance free of cost and directed to take measures for their safety and security. The Government also supplied 12 kgs of rice/atta per person, 1 kg of redgram dal/chana and financial assistance of Rs. 500 to 6.5 lakh migrants in May and June 2020. The Government, in coordination with line departments and railways, helped more than 2 lakh migrant workers reach their homes safely.

Reaping Past Investments

A major factor for Telangana's resilience to COVID-19 has been the Government's sustained commitment to the state's development through its flagship economic

and social policies, and investments in governance. For instance, the Government's investment in health infrastructure since the state's formation equipped the state well to handle COVID-19. The state's efforts to strengthen the pharmaceutical sector has resulted in Hyderabad-based companies playing a pivotal role in the research and production fronts of the global vaccination effort.

Similarly, the sustained success of the agriculture sector, which has grown on average by 14.5% annually for the last five years, has helped mitigate the economic impact of COVID-19 and reflects the Government's relentless efforts to increase farmer incomes. Crop production has increased because of sustained investment in irrigation projects like Kaleshwaram, Sita Rama, Palamuru-Rangareddy and Mission Kakatiya. Because of these investments, the irrigation potential of the state has increased. The Government also provides 24x7 power supply to the agriculture sector. The role of Rythu Bandhu Scheme in providing timely investment support to farmers is deeply appreciated. This scheme inspired similar schemes across the country, including the Government of India's PM Kisan transfer programme. In 2020-21, the Government transferred Rs. 14,651 crore to 59.3 lakh farmers.

The Government is proactively helping farmers maximize incomes. The Government has nudged farmers towards cultivation of more remunerative horticulture crops like oil-palm and rearing of livestock. Telangana has emerged as a national leader in livestock production and the livestock sector supports about 25.8 lakh families in the state and accounts for 9.1% of the state's GSDP (2020-21 AE). All these measures have not only helped increase farmers' incomes but also helped the rural economy weather the shock of COVID-19.

A major focus for the Government has been to further strengthen the services sector, the bedrock of the state's economy. The ICT Policy, launched in 2016, has boosted investment and employment generation while initiatives such as Technology-Hub (T-Hub), Women Entrepreneurs Hub (WE Hub), and T-Works have

promoted entrepreneurship and innovation, especially in the IT sector. The state is now a national leader in IT services and accounted for 23.5% of India's IT export growth for 2019-20. Global IT giants Google, Microsoft and Amazon have all established their offices in Hyderabad. The state's flourishing services sector has driven economic growth over the last few years and the trend continued even during the pandemic, as IT professionals could continue their work remotely.

In industry, the Government's flagship TS-iPASS scheme has played an important role in promoting industry and attracting investment. The state has seen a nearly three-fold increase in the number of units, and in employment in firms, using TS-iPASS since 2015. Investment committed by firms using TS-iPASS has also increased by over 33%, during the same period. Despite COVID-19, in 2020, there were 3,005 TS-iPASS units which attracted Rs. 30,667 crore in investments and employed 1.79 lakh people. Most notably, 24% of the state's investments are repeat commitments from satisfied investors, an indicator of a successful industrial policy. The state is now one of the best places to do business in India as reflected by its consistent ranking amongst the top 3 states in the Ease of Doing Business rankings.

Besides the ease of doing business, the Government is committed towards 'ease of living'. The Government is dedicated to strengthening governance to improving citizens' experience by making schemes accessible ('na darkasth, na daftar'). In the Government's flagship schemes such as Rythu Bandhu and Rythu Bima, citizens neither need to apply for benefits nor visit Government offices. Most departments have dedicated helpline numbers to redress the grievances of the citizens and the human interactions were minimized and working was computerized.

All processes of land revenue administration, such as land transfers, updates and registrations, have been integrated with the Dharani portal, which is a unique land administration and management system. This portal has brought about transparency and accountability in land record management and

provides responsive and hassle-free citizen service. Transactions are authenticated through biometric data (fingerprints), the registration process has been taken to the doorstep and mutation and registration happens automatically. Historically, land reforms and better land titling systems are associated with greater economic growth and through Dharani the state is on the way to reaping these benefits.

The Government's commitment to strengthening governance through decentralization improved policymaking and service delivery and brought governance closer to the doorsteps of people by increasing the number of districts, mandals and Panchayats. After reorganization, the districts and mandals in the state are among the smallest in the country in terms of population. The average population per district is 11.5 lakhs, 20% less than the national average of 14.5 lakhs. The state's average mandal population is 63,600, which is 60% of the national average of 1.47 lakhs.

The Government has empowered local governance structures through the Telangana Panchayat Raj Act 2018, the Telangana Municipalities Act 2019 and the Greater Hyderabad Municipal Corporation (Amendment) Act 2020. In districts, a new post, Additional Collector (Local Bodies), was created to focus specifically on the governance of rural and urban local bodies. This decentralized administration, combined with strengthened local governance, allowed the Government to better understand the local conditions, quickly respond to the problems of citizens, and provide more support to them—all critical for responding effectively to COVID-19.

Turning Crisis into Opportunity

Though COVID-19 has been a traumatic experience, the Government has been using it as an opportunity to accelerate the journey towards the state's development. COVID-19 forced the Government to invest in health infrastructure but this infrastructure is already being redeployed for other health services. For

example, the Telangana Institute of Medical Sciences will now serve as a full-fledged hospital. Similarly, the Government used the COVID-19 lockdown to expedite key infrastructure projects across the state.

COVID-19 also highlighted the importance of a strong social safety net. The Government has redoubled its efforts to protect the vulnerable through schemes such as Aasara pensions and 2BHK housing, while ensuring that national schemes such as the PDS and MGNREGS continue to be implemented effectively.

The Government continues to invest in the state's future. The immediate priority is to ensure that children catch-up on their year of disrupted learning and receive the nutrition and support needed to fulfill their potential. A healthier, more educated population is the foundation for prosperity.

Another important factor for prosperity is secure, stable livelihoods for all citizens. In agriculture, the Government will build on its irrigation projects and investment support to further boost farmers income. In industry and services, the Government will continue to attract investment and create high-paying jobs in the state. At the same time, the Government will ensure that growth is sustainable and the state's natural resources are replenished.

Ultimately, the goal of the Government is to improve outcomes across all sectors and quality of life for every citizen in the state. As these pages will highlight, much progress has been achieved. Telangana may be the country's youngest state but it is already a national leader in many sectors. The Government is committed to making the state a leader in every sector.



Districts of Telangana



CHAPTER 2

MACROECONOMIC TRENDS



Key Highlights

The COVID-19 shock has adversely impacted economic growth all over the world, but Telangana's economy has shown impressive resilience and the recovery is already underway.

- In 2020-21, economic output, measured by Gross State Domestic Product (GSDP) was Rs. 9.78 lakh crore, and only fell by 1.26% in 2011-12 prices. In comparison, the real economic output at the national level fell by 8%.
- The resilience was led by the agriculture and allied sectors, which grew by 20.9%, dwarfing the 3% growth at the national level.
- Although the industry and services sector contracted by 5.6% and 4.9% respectively, they still fared better than the much steeper contractions at the national level.
- Due to its high growth rate, the agriculture and allied sector contributed a higher share to overall GSDP than in any year since formation. However, at an aggregate level, the services sector continues to contribute the highest share.
- Per capita incomes in the state continue to be higher than at the national level. In 2020-21, the per capita income in the state is 1.78 times higher than the national average.
- Finally, several high frequency indicators indicate that the state's economy is on the path of a rapid V-shaped recovery.



2.1 Economic Growth

Across the world, COVID-19 has brought economic growth to a halt. The global economy is estimated to contract by 4.4% in 2020 (compared to 2019), according to the International Monetary Fund. In India, the second advance estimates released by the Ministry of Statistics and Programme Implementation (MoSPI) reveal that national economic output, measured by Gross

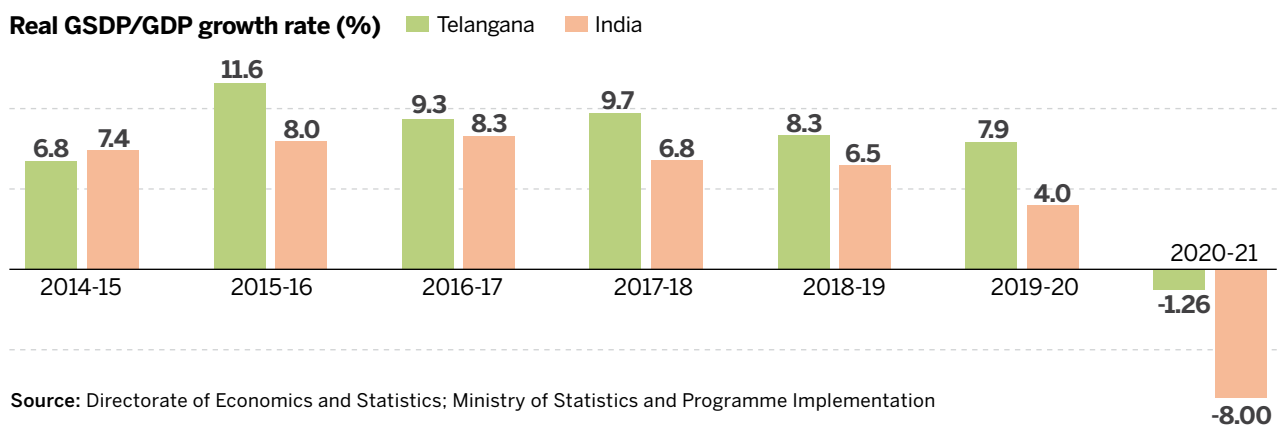
Domestic Product (GDP), will shrink by 8% in 2020-21. Compared to these negative growth estimates, Telangana's economy has been more resilient (see Figure 2.1).

In 2020-21, economic output in the state, measured by Gross State Domestic Product, was Rs. 9.78 lakh crore; it only fell by 1.26% in 2011-12 prices and grew by 1.35% in 2020-21 prices.¹

Figure 2.1

Real GSDP/GDP growth rate for Telangana and India

Economic growth in Telangana has fallen sharply due to COVID-19— but not as sharply as India's



¹ Gross State Domestic Product measures the size of the state's economy. It is a commonly used indicator for the performance of the state's economy. Generally a rapidly increasing GSDP is a sign of a healthy economy. GSDP is the value of all the final goods (e.g. cars, food, furniture) and services (e.g. services provided by barbers, taxi drivers, waiters) produced within the state during the year. Importantly, there are two measures of GSDP: nominal GSDP (GSDP at current prices) and real GSDP (GSDP at constant prices). While nominal GSDP is calculated by using the prices of the current year, real GSDP is calculated by using the prices of some other year designated as the 'base year'. Therefore, changes in nominal GSDP between years reflect the change in both prices as well as quantity of final goods (e.g. number of cars) and services (e.g. number of haircuts) produced. In contrast changes in real GSDP reflects only changes in the quantity of goods and services produced, since the same prices are used for all years. In this chapter, all references to GSDP growth are changes in real GSDP with 2011-12 as the base year.

Until the pandemic, the state's economy had been growing rapidly, outpacing national economic growth every year since 2015-16. By consistently outperforming the country, the state's share of national nominal GDP has steadily increased in the past decade since formation (see Figure 2.2).

Figure 2.2

Telangana GSDP share of national GDP

Telangana's share of national nominal GDP has increased significantly

Telangana GSDP share of National GDP (%)



Source: Ministry of Statistics and Programme Implementation

Box 2.1

Impact of COVID-19 and Telangana's V-Shaped Recovery

The Government of India imposed a strict lockdown to arrest the spread of COVID-19 virus in March 2020. The lockdown between March and June, coupled with fear and uncertainty about the virus, greatly reduced economic activity. One way to measure the fall in activity is to track transit mobility (i.e., movement of people within the state). According to data compiled by Google, monthly transit mobility in India and the state fell sharply in April and May, when the most stringent lockdowns were in place, and then gradually recovered as restrictions were loosened. Importantly, even in December 2020, mobility levels had not returned to its pre-pandemic levels.

Another measure of the economic cost of COVID-19 and the lockdown was the large spikes in unemployment rates.

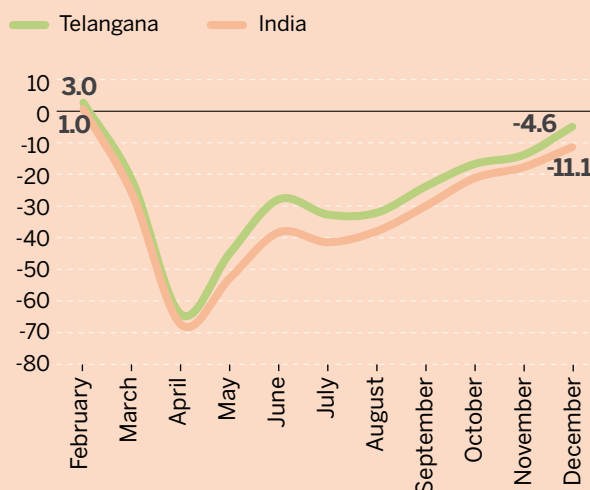
Continued on next page

Figure 2.3

Monthly transit mobility in 2020

Telangana effectively implemented the preventive lockdowns as indicated by large reductions in people's mobility in this period

Monthly transit mobility in 2020 (deviation from baseline)



Source: Google Mobility Reports

Note: Mobility is measured using GoogleMap data. Each value indicates the change in mobility compared to level of mobility during the pre-pandemic period (a five-week period from January 3, 2020 to February 6, 2020). For instance, in December, transit mobility in Telangana was on average 4.6% lower than during the pre-pandemic level.

Box 2.1 (continued from previous page)

According to data from the Centre for Monitoring Indian Economy (CMIE), unemployment in India sharply increased in April (23.5%) and May (21.7%). Unemployment rose in Telangana as well, however two interesting points stand out. First, the increase in unemployment was delayed—unemployment rates in April were not much higher than in March and lower than in February. Second, the peak was much lower in the state at 14.7% than in the rest of the country.

Gradually, as the country opened up, unemployment fell in the state and the country. The rapid, V-shaped recovery can be seen in the uptick in the mobility data, as well as the fall in the unemployment rate from June 2020

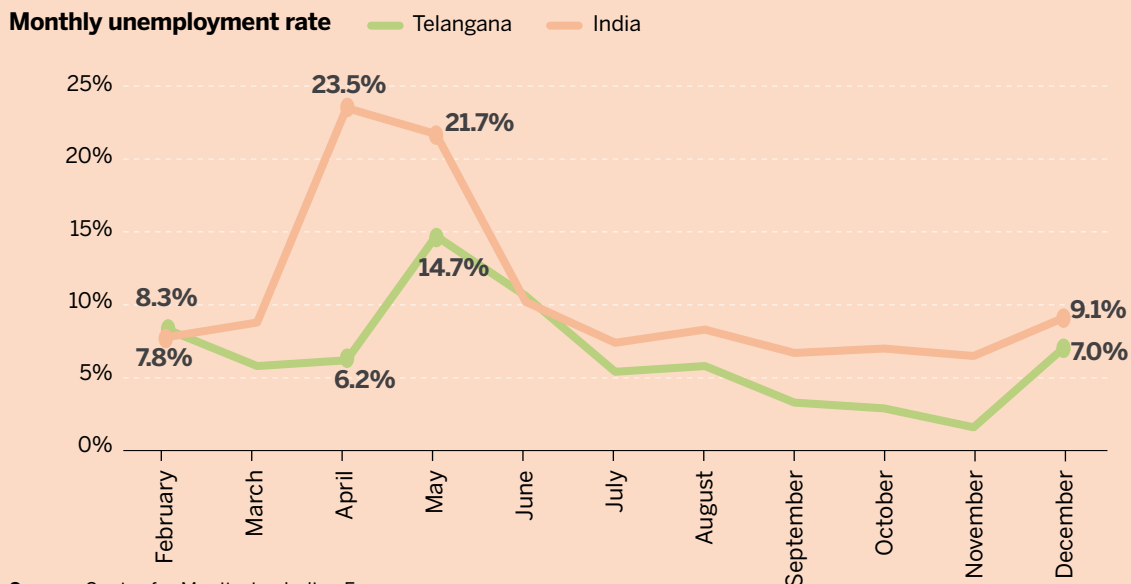
onward. The recovery can be seen very starkly in the uptick in the Industrial Index of Production (IIP), which is a monthly measure of growth in industrial activity (Figure 2.6).

Overall, the trend that emerges is one of unprecedented disruption. The pandemic imposed severe restrictions on people's movements, which in turn led to a rise in unemployment and fall in business activity. Telangana was no exception, although the state has insulated its citizens better than the rest of the country. The good news is that all indicators point to a return to normalcy and a recovering economy.

Figure 2.4

Monthly unemployment rate in 2020

Although the pandemic and reduced activity led to a temporary spike in unemployment in Telangana, it was not as severe as in the rest of the country



Source: Centre for Monitoring Indian Economy

2.2 Sectoral Overview

2.2.1 Sectoral Growth²

Telangana's economy has fared better than the country in the past year. This is primarily due to the impressive performance of the agriculture and allied sector (crops, livestock, fisheries, forestry)—the sector's real Gross State Value Added (GSVA)³ grew by an impressive 20.9%, the second highest growth rate since the state's formation. Compared to this, the national growth rate of 3% is quite modest.

Part of this growth reflects the fact that the sector was least affected by COVID-19. However, growth in this sector had been robust even before the pandemic. Since 2016-17, the average annual growth rate in this sector has been 14.5%. The driving forces behind this have been the crop and livestock subsectors, averaging annual growth rates of 17.1% and 13.9% respectively during this period (see Agriculture chapter for more details). This is a reflection of the Government's emphasis on promoting agriculture and allied sectors. Various initiatives such as those focusing on horticulture crops, livestock (e.g., Sheep Rearing Development Programme and the Mass Free Sheep and Goat Deworming Programme) and irrigation (through the Kaleshwaram project, Mission Kakatiya and other irrigation projects) contributed to this robust growth. The state has also been fortunate to have received good monsoons in 2016-17, 2019-20 and 2020-21.

In contrast to the agriculture and allied sector, in 2020-21, the industrial sector growth (including mining sector) contracted by 5.6%. Despite this, the state still fared better than the country, where the sector contracted by 8.2%. Although the sector was initially hit hard, it has quickly recovered. The state's V-shaped

Figure 2.5a and 2.5b

Real sectoral growth rates

The agriculture and allied sector grew an impressive 20.9% in 2020-21, cushioning the impact of COVID 19. Although industries and services contracted, the contraction was less severe than at the national level

Figure 2.5a: Telangana

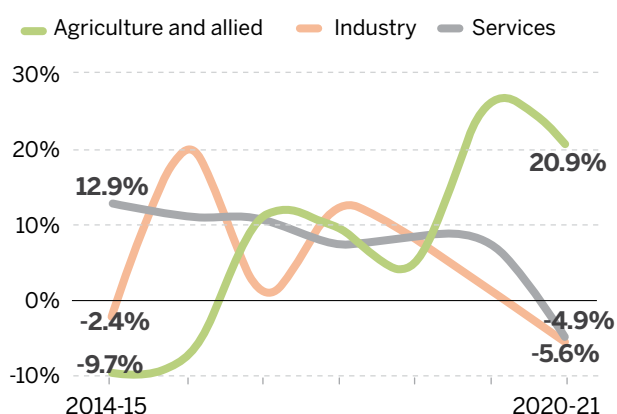
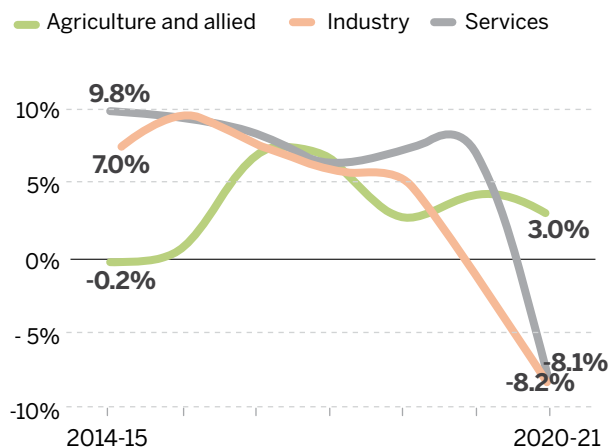


Figure 2.5b: India



Source: Directorate of Economics and Statistics; Ministry of Statistics and Programme Implementation

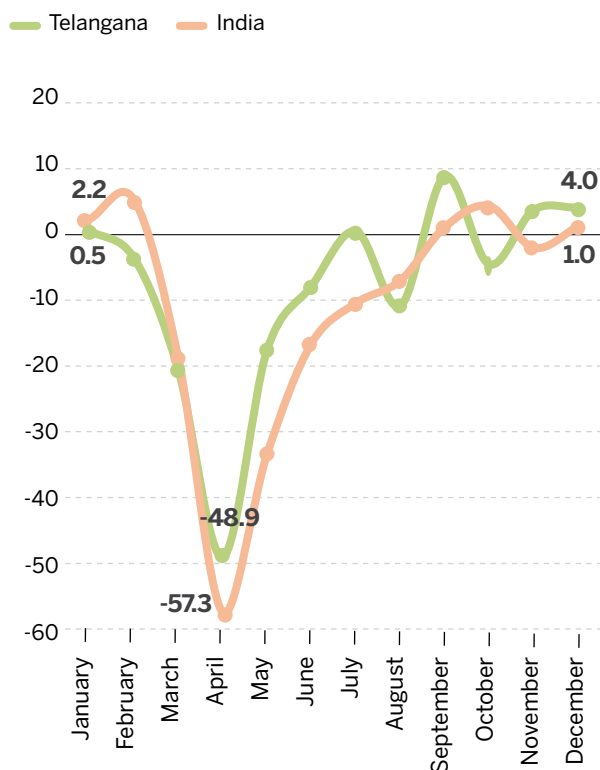
2 Traditionally, the three sectors discussed are the primary, secondary and tertiary sectors. In this chapter, we divide the economy into the agriculture and allied sector (primary sector minus the mining and quarrying subsector), the industrial sector (secondary sector plus the mining and quarrying subsector), and the services sector (tertiary sector). The primary, secondary and tertiary sectors grew at 14.9%, -5.4%, and -4.9% respectively in 2020-21 see annexure for detailed tables on Telangana's economy).

3 The Gross Value Added (GVA) of any unit (sector, sub-sector, firm, etc) measures the contribution of that unit to the overall output of a country or state. It is calculated by subtracting the value of all intermediate goods and services from the total value of units output. This is done to remove any 'double counting'. For instance, assume that a firm buys oranges and sells orange juice. The value of the oranges should be subtracted while calculating the firm's gross value added, as this is already included in the final value of the orange juice.

recovery can be observed by tracking the monthly trend of the Industrial Index of Production (IIP)—an index which shows the growth rate of the industrial sector on a monthly basis. It is clear that the fall in IIP was not as severe in the state as it was in the rest of the country. Importantly, the IIP has quickly bounced back from its lows in April 2020, indicating a rapid V-shaped recovery (see Figure 2.6). For December 2020, its value was positive, indicating that the industrial output was higher than in December 2019. Table 2.1 provides the sector wise trends for the IIP in 2020.

Figure 2.6
Industrial Index of Production

The V-shaped trend of the Industrial Index of Production suggests that the economy is rapidly returning to normalcy



Source: Directorate of Economics and Statistics; Ministry of Statistics and Programme Implementation

Finally, the services sector is estimated to contract 4.9% in 2020-21, compared to a national contraction of 8.1%. The services sector drives economic growth in the state. Services growth itself has been fuelled by the IT sector, with Hyderabad emerging as one of the world's leading IT hubs (see Services chapter for more details). The contributions of the three sectors to the overall growth rate can be seen in Figure 2.7.

2.2.2 Sectoral Contribution⁴

Since the formation of the state, the services sector has contributed the highest share of the GSVA among

Table 2.1
Sector wise break up of the IIP (%)

	Mining	Manufacturing	Electricity	General
January	-23.6%	4.5%	15.4%	0.5%
February	-30.7%	0.2%	22.1%	-3.6%
March	-20.1%	-26.4%	2.9%	-20.5%
April	-63.9%	-52.7%	-15.3%	-48.9%
May	-33.2%	-15.0%	-9.3%	-17.6%
June	-13.6%	-7.0%	-5.2%	-7.9%
July	-4.5%	0.2%	7.3%	0.4%
August	-12.3%	-11.8%	-6.4%	-10.9%
September	-8.4%	15.9%	-2.2%	8.7%
October	-17.1%	-0.6%	-5.6%	-0.5%
November	45.6%	-4.9%	-17.2%	3.6%
December	1.4%	7.1%	-6.5%	4.0%

Source: Telangana Directorate of Economics and Statistics

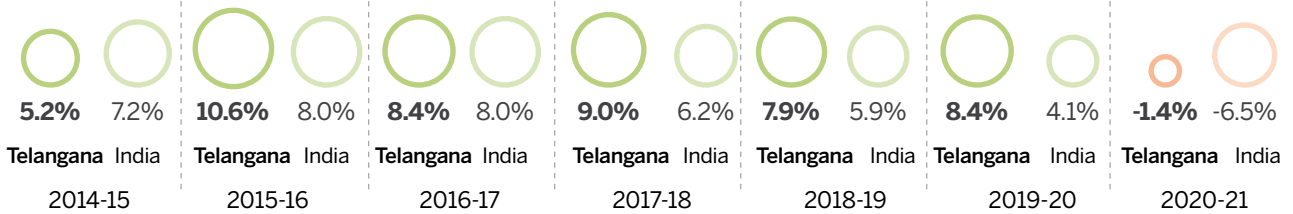
⁴ The primary, secondary and tertiary sectors contributed 24.3%, 15.3% and 60.4% respectively to overall nominal GSVA.

Figure 2.7

Telangana sectoral GSVA growth rate contribution

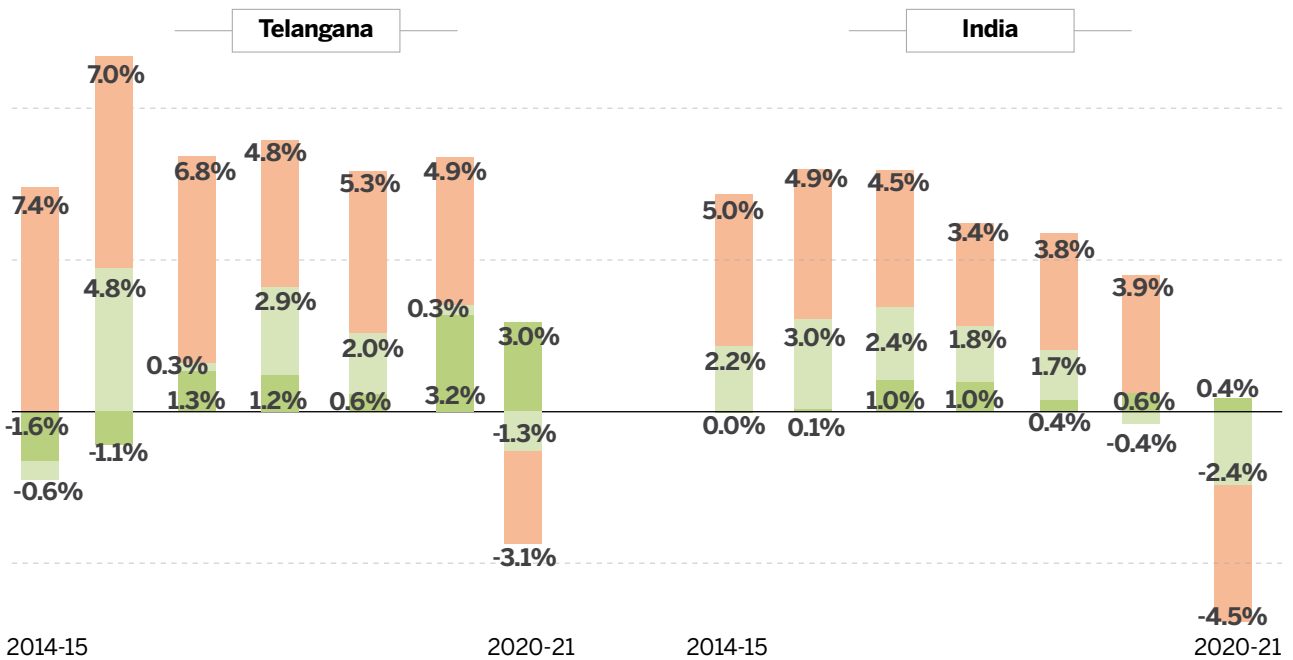
Growth in 2020-21 primarily came from Agriculture, which compensated to a significant extent the negative growth in Industry and Services. In contrast, at the national level, agriculture was stagnant

Growth in GSVA



Contribution to growth in GSVA

■ Agriculture and allied ■ Industrial ■ Services



Source: Directorate of Economics and Statistics; Ministry of Statistics and Programme Implementation

Note: Sectoral values may not exactly add up to the aggregate due to rounding of figures

the three sectors, contributing 62.3% of overall GSVA on average during this period. While the services sector also contributes the highest share at the national level, its share is lower (53.1%).

The industrial sector however, contributes a smaller share at the state level than at the national level (21.7% in Telangana vs 28.5% in India). Because the share of

the industrial sector in the state has historically been lower than the national average, the Government has been proactive in implementing initiatives to drive industrial growth (see Industries chapter for more details). One example of this is the Telangana State Industrial Project Approval and Self-Certification System (TS-iPASS) Act, 2014 for speedy processing of applications to set up industries in the state. In the

year after its introduction, the industries sector grew by a record 20%. As a result of these initiatives, there has been an improvement in the business environment in the state: its Ease of Doing Business rank rose from 13 in 2015 to 1st in 2016 and was consistently ranked amongst the top 3 states ever since.

Finally, the shares of the agricultural sector have remained relatively similar for Telangana and India for much of this period, although the state's share has generally been lower (Figure 2.8a and 2.8b).

2.3 Gross District Domestic Product

Within the state, some areas contribute more to GSDP

as revealed by the spatial differences in Gross District Domestic Product (GDDP), which is the district level equivalent of GSDP, in 2019-20 (see Figure 2.9). The 5 districts with the highest GDDP are Rangareddy, Hyderabad, Medchal-Malkajgiri, Sangareddy and Nalgonda, which collectively contributed 51.8% of the state's total GSDP.

2.4 Per Capita Income

While GDP provides a sense of the size of the economy, per capita income⁵ is a better measure of people's welfare. In 2020-21, per capita income in the state was Rs. 2.27 lakh and only grew by 0.6% from Rs 2.26 lakh in 2019-20 in current prices. Importantly however, the state's per capita income is not only higher than the

Box 2.2

Telangana's Performance in the India Innovation Index

Given that physical resources are limited, constant innovation in using these resources efficiently is the key to sustained economic development and progress. To gauge the innovation capacities and performance of Indian states, the NITI Aayog has developed the India Innovation Index. In 2020, Telangana ranked 4th among the 17 major states. The index measures both inputs for innovation ('Enablers') as well as all the outputs from innovation ('Performance').

Enablers for innovation are the factors which facilitate innovation. These include human capital (measured by metrics like PhD enrolment and schools with ICT labs); investments (e.g. spending on higher education and venture capital deals); extent of knowledge workers in the economy (e.g. R&D units); business environment (e.g. state Ease of Doing Business ranking); and safety and legal environment (e.g. IT/intellectual property acts and court case pendency). On all these 'Enabler' measures, Telangana ranked 7th with a score of 31 (Kerala was the leader with a score of 37).

'Performance' represents outputs which are a result of innovation and include the following: knowledge output (measured by metrics like patent applications filed and new businesses registered) and knowledge diffusion (e.g. ICT exports and citations). On 'Performance', Telangana ranked 4th with a score of 35.5 (Karnataka was the leader with a score of 50.2).

⁵ Per capita income measures the amount of money that would be available if the total value of all goods and services produced in the economy was divided equally among all citizens. An important point to note is that capital goods (e.g. machines) depreciate in value with time. To adjust for this, before dividing, we first subtract this depreciation from the GSDP.

Figure 2.8a and 2.8b

Telangana/India sectoral share of GSVA (current prices)

Compared to India, the services sector contributes a higher share to Telangana's GVA, but the share of industrial sector is lower

Share of GSVA (%) ■ Agriculture and allied ■ Industrial ■ Services

Figure 8a: Telangana

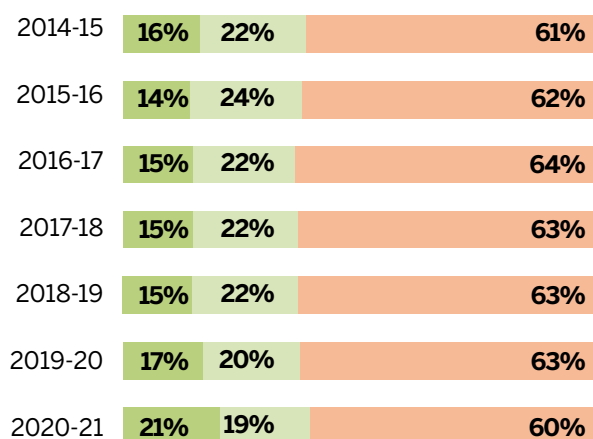
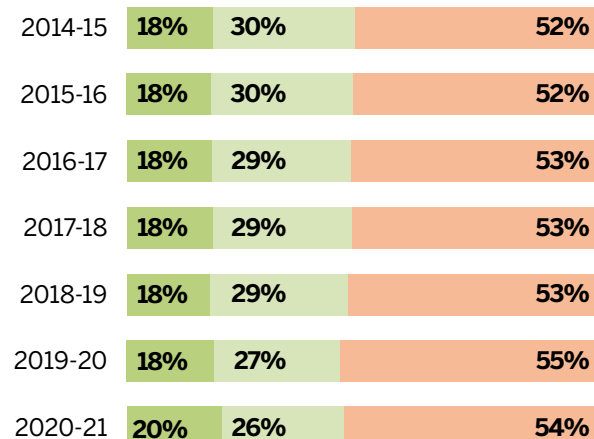


Figure 8b: India

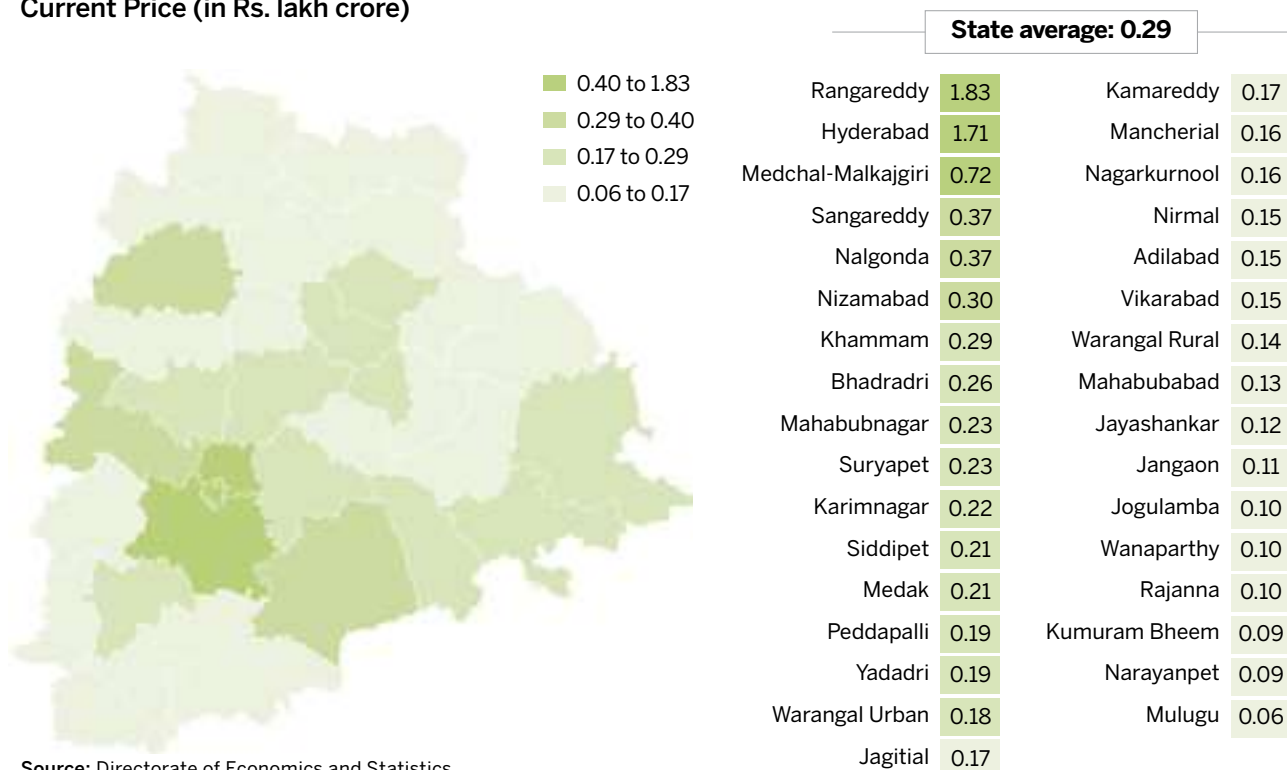


Source: Directorate of Economics and Statistics; Ministry of Statistics and Programme Implementation

Figure 2.9

Gross District Domestic Product of Telangana in 2019-20

Current Price (in Rs. lakh crore)



Source: Directorate of Economics and Statistics

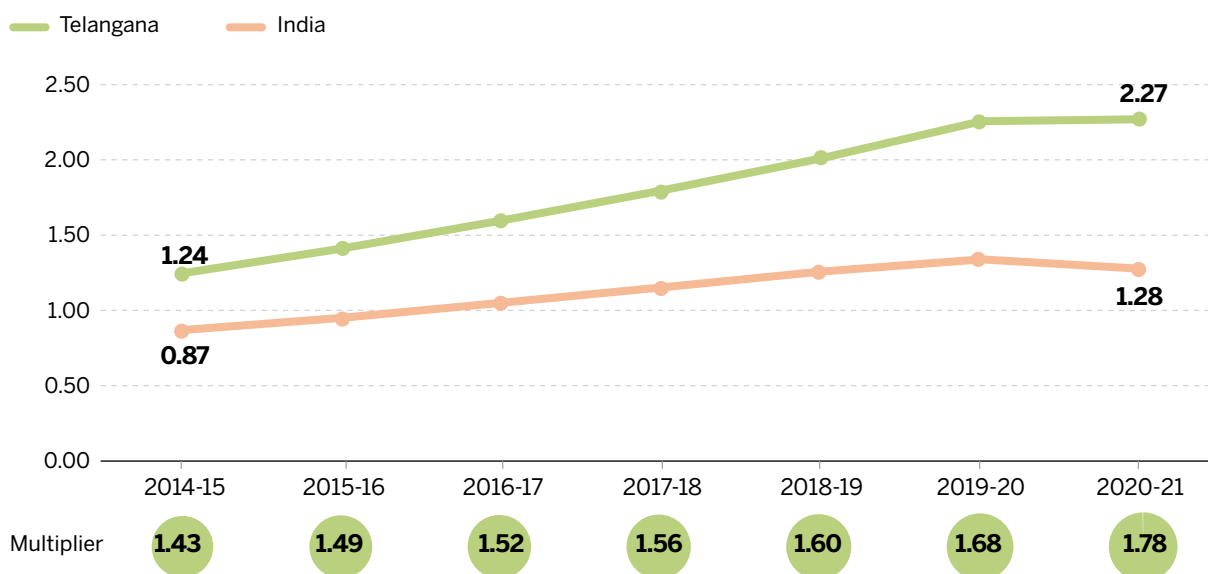
national average, but has consistently been growing at a faster rate at 10.7% as compared to the national rate of 7.2% during the same period. This means that in the state, the average citizen can expect their income to double in roughly 7 years, whereas the average

citizen in the country as a whole would have to wait for about 10 years. Consequently, per capita incomes in the state are now 1.78 times higher than the national average today, compared to 1.43 times higher at the time of state formation.

Figure 2.10

Telangana nominal per capita income (Rs lakh)

Per capita income in Telangana are 1.78 times higher than national per capita incomes



Source: Ministry of Statistics and Programme Implementation (GoI)

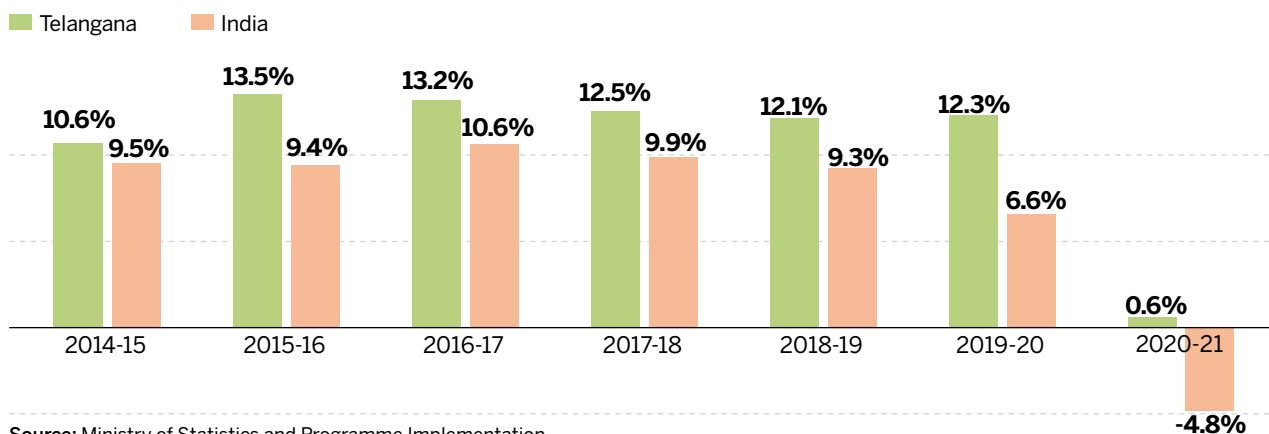
Note: Multiplier indicates Telangana's PCI in relation to India's -- e.g. in 2020-21 Telangana's PCI was 1.78 times that of India

Figure 2.11

Growth in nominal PCI

Per capita income growth has outpaced the national average

Growth in nominal per capita income (%)

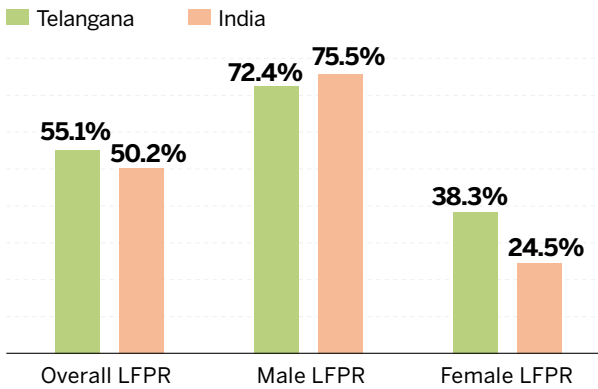


Source: Ministry of Statistics and Programme Implementation

Figure 2.12

Labour force participation rate (%)

Telangana's female labour force participation rate is significantly higher than India's



Source: Periodic Labour Force Survey 2018-19

2.5 Employment

One of the fundamental goals of the Government is to generate growth that creates high-quality jobs in the state. A necessary condition for this is a steady supply for labour. The labour force participation rate (LFPR), which is the percentage of all those aged 15 years or more who are either currently employed or looking for employment, is a measure of the labour supply in the economy. According to the Periodic Labour Force Survey (2018-19), conducted by Ministry of Statistics and Programme Implementation (MoSPI), Government of India, LFPR in the state was 55.1%, which was higher than the national figure (50.2%). Crucially, female LFPR, which is also a measure of female empowerment and agency, was much higher in Telangana (38.3%) than in India (24.5%).

For those in the labour force, the unemployment rate (share of the labour force which is currently not employed and looking for employment) is an important indicator of labour market health. According to PLFS data, the unemployment rate in the state in 2018-19 was 8.3%.

The state is also performing well in terms of quality of jobs. Overall, 27% of employed persons in the state have a salaried job. This is higher than the national average of 23.8%. Among salaried persons in the non agricultural sector, 25.9% have a written job contract, and 39% are eligible for paid leave. Moreover, 37.8% receive some social benefits (PF/pension, gratuity, healthcare, or maternal benefits).

2.6 Way Forward

The GSDP estimates for 2020-21 suggests that COVID-19 has significantly reduced growth in Telangana, but the state has managed this adverse impact relatively well compared to the country situation. Before COVID-19, the state's economy was enjoying robust growth driven by a flourishing services sector. Importantly, this growth has been inclusive and has improved the well-being of the poorest.

On an overall level, high frequency indicators suggest that economic activity has been on the rebound in recent months. As the vaccine implementation programme rolls out, the state's rebound is likely to strengthen. This will allow it to build on its strong fundamentals and propel its economy forward.

CHAPTER 3

PUBLIC FINANCE



Key Highlights

Sound public financial management is foundational for good governance. The Government's ability to raise revenues efficiently and spend diligently allows it to provide welfare and, over the last year, allowed it curb the spread of COVID-19. Key highlights over the year include:

- The COVID-19 induced lockdown in March 2020 led to a steep decline in revenue in April 2020, with the State's Own Tax Revenue (SOTR) collected in April 2020 falling by 87.7% when compared to collection in April 2019.
- Expenditure requirements increased for building the necessary medical infrastructure and supplies, such as PPE kits, oxygen beds, ventilators, etc., and providing welfare measures. The Government sanctioned a total of Rs. 5,268 crore for COVID-19 related measures.
- At the same time, the reformative efforts of the Government enabled the state to borrow an additional amount of 1.75% of GSDP under Aatma Nirbhar Bharat Abhiyan, beyond the 3% of GSDP permissible as fiscal deficit.
- Financial management in the state was more prudent when compared to that of the 18 general states (India GS) in the country (which account for 92.2% of India's population and do not receive any special dispensation from the Government of India), during 2016-17 to 2018-19, represented by 2016-19¹.
- The state recorded the highest annual tax growth during the period 2014-19 (after adjusting the 2014-15 figures to account for full year) at 16.6%. Between 2016-17 and 2018-19, the state's tax to GSDP ratio was the highest in India GS at 7.5% against an average of 6.3% for India GS.
- Between 2016-17 and 2018-19, the state's capital outlay constituted 23.2% of total expenditure against 14.8% for India GS. The state's development expenditure constituted 78.5% of total expenditure against 70.4% for India GS.
- Between 2016-17 and 2018-19, the state had an average revenue surplus of 0.39% of GSDP as against an average of revenue deficit of 0.12% of GSDP for India GS. The state's average debt to GSDP ratio is 21.1% as against 27.3% of India GS.
- In terms of the implications of the 15th Finance Commission (FC), the share of Telangana in the divisible pool of taxes has come down from 2.437% in 2015-20 to 2.133% in 2020-21 and it has now further come down to 2.102% for 2021-26. This is estimated to result in a loss of Rs. 14,151 crore to the state, when compared against the share recommended by 14th FC of 2.437%.
- Further, 15th FC has recommended grants worth Rs. 5,386 crore to the state—Rs. 3,024 crore as sector specific grants and Rs. 2,362 crore as state specific grants. However, the Government of India did not accept this recommendation per se, and stated that this recommendation will be duly considered in implementation of central schemes.

1 2016-19 used in this chapter corresponds to average of 2016-17, 2017-18 and 2018-19



3.1 Fiscal Impact of COVID-19

3.1.1 Revenue

The COVID-19 pandemic led to a further blow on the already slowing down of the economic activity, resulting in revenue shortfalls world-over. The state saw a dip in revenue across key taxes, starting in March 2020.

The state's own tax revenue (SOTR) collection in April 2020 fell by 87.7% compared to that collected in April 2019 (Figure 3.1). Similarly, in May 2020, it fell by 50.8%. However, post-May 2020 there was a steady recovery, owing to the Government's calibrated lockdown exit strategy. By June 2020, SOTR collection recovered and reached the levels earned in June 2019. The state earned Rs. 36,806 crore in SOTR between April and December 2020, which was 9.4% less compared to that earned in the same period in 2019.

This trend of revenue decline and recovery were observed in all the major individual taxes that

comprise SOTR - Value Added Tax (VAT), State Goods and Services Tax (SGST), stamps and registration fees, motor vehicle tax and excise (Figure 3.1). Of these taxes, excise had the steepest fall in April 2020 (a drop of 99% compared to April 2019) but also had the quickest recovery (rebounding to 123% increase in collections compared to June 2020). These trends are shown in Figure 3.1.

3.1.2 Expenditure

The COVID-19 pandemic forced the Government to increase expenditure and realign existing expenditure priorities in order to save lives.

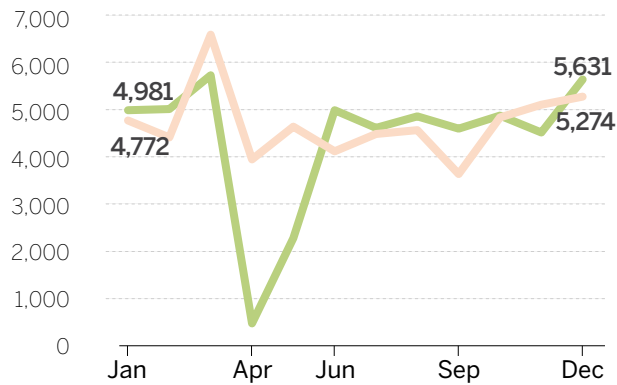
In total, the Government has sanctioned Rs. 5,268 crore in COVID-19 related measures to be spent on health and medical facilities (Rs. 1,177 crore), Rs. 1,500 crore twice to each of all food security card holders (Rs. 2,628 crore), ration support (Rs. 1,103 crore), support to migrant labourers (Rs. 124 crore), CM's special incentive to health, municipal and gram panchayat employees (Rs. 182 crore), and support to police department (Rs. 54 crore).

Figure 3.1

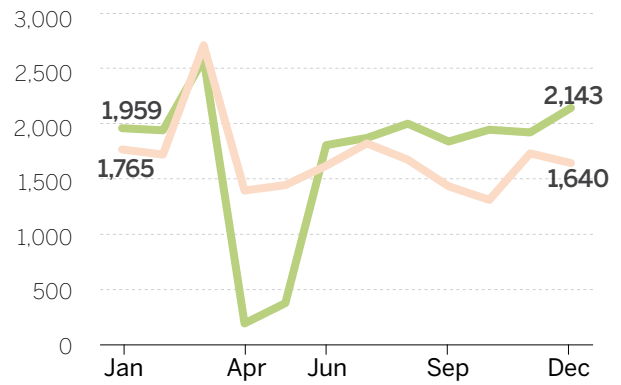
Month-on-month tax collection (2020 & 2019) in Rs. crore

— 2020 — 2019

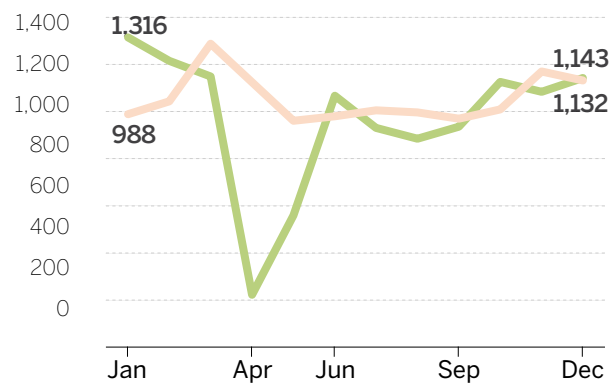
State's Own Tax Revenue (SOTR)



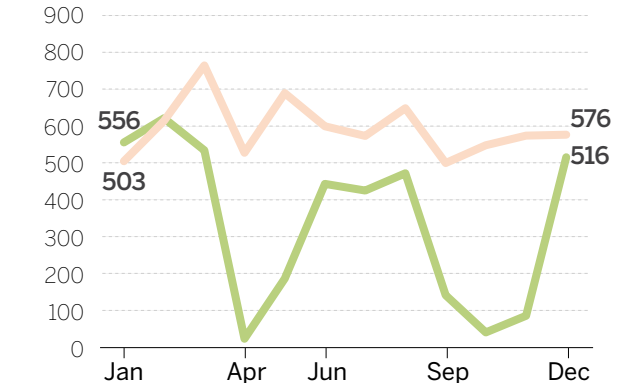
Value Added Tax (VAT)



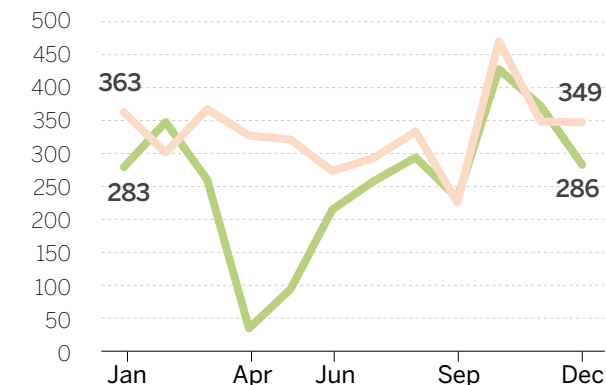
States Goods and Services Tax (SGST)



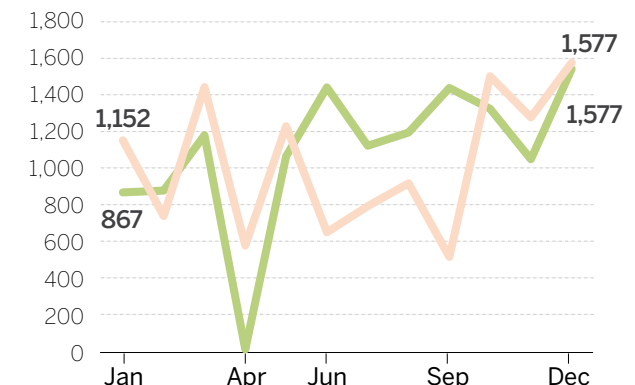
Stamps and registration fees



Motor vehicles tax



Excise



Note: SOTR is calculated as the sum of major tax components, namely sales tax (includes VAT), SGST, stamps and registration fees, excise and motor vehicles tax. Other components accruing lower values of revenue (like urban immovable property tax, taxes on professions, trades, callings and employment), which amounted to 1.8% of SOTR for Telangana on average from 2016-17 to 2019-20 RE (Revised Estimates), have been excluded from this analysis.

Source: Finance department, Government of Telangana

With the limited revenue collection and the need to focus expenditure on health and welfare of the people, the Government took the decision of deferring a part of the salaries of the public representatives and government employees to create fiscal space for handling the COVID-19 crisis.

3.1.3 Debt

While the Government increased expenditure to curb COVID-19, it also ensured other important programmes, such as Rythu Bandhu and Aasara pensions continued to function. This combined with falling revenues meant that the Government had to borrow additional funds to finance expenditure. The Government of India allowed additional borrowings of 2.0% of GSDP during 2020-21, which is partly unconditional and partly conditional under Aatma Nirbhar Bharat Abhiyan.

The Government was able to borrow an additional 1.75% of GSDP beyond the usual 3% of GSDP. It was able to borrow this additional amount of Rs. 17,558 crore because the state met these conditions—implementing one nation one ration card, undertaking ease of doing business reforms and urban governance reforms. This was possible due to the reform mindset of the state, and the state was already a forerunner in these reforms even before COVID-19 pandemic.

3.2 Comparative Fiscal Profile of Telangana

The Government's ability to respond effectively to COVID-19 through additional spending reflects the state's strong fiscal position. This in turn is a result of the Government's prudent financial management in recent years.

One way to understand the state's public finances better is to examine financial data between 2016-17 and 2018-19, and compare this with equivalent figures from other general states in India, represented by India GS². This nomenclature and approach of taking a three year average of the most recent years for which audited accounts are available is strictly in line with the methodology adopted by the 15th Finance Commission to compute financial indicators of states as the basis for their recommendations.

3.2.1 Revenues

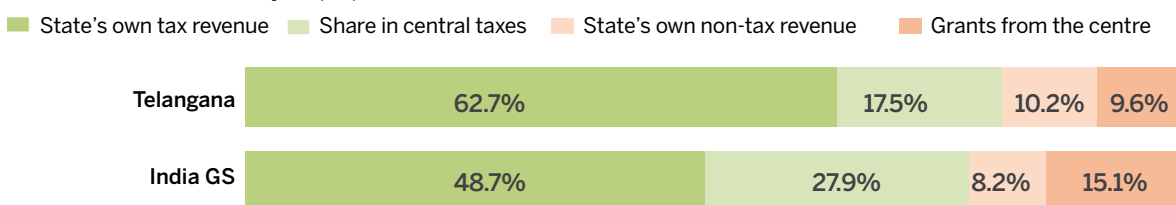
3.2.1.1 Composition

The Government's receipts can broadly be divided into revenue receipts (earned through tax and non-tax sources and transfers from the Government of India) and capital receipts (earned through the borrowings, receiving repayment of debts or via sale of assets). The state budgeted revenue receipts of Rs. 1,43,152 crore and capital receipts of Rs. 35,550 crore in 2020-21

Figure 3.2

Composition of revenue receipts of Telangana and India GS (2016-19 average)

Share of revenue receipts (%)



Source: RBI State Finances: A Study of Budgets (various years); Note: Due to rounding off, the figures may not add up to exactly 100%

² General States include 18 Indian states of Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal. These 18 states account for 92% of India's population and are estimated to contribute to 92.2% of own tax revenue of all states and UTs in 2020-21 BE.

Figure 3.3

Composition of state's own tax revenue (SOTR) of Telangana (2016-19 average)

Share of state's own tax revenue (%)



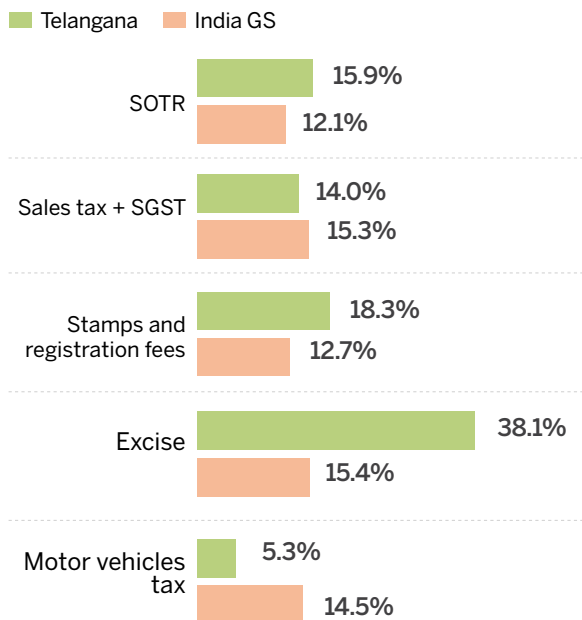
Source: RBI State Finances: A Study of Budgets (various years)

Note: Components of SOTR accruing lower values of revenue (like urban immovable property tax, taxes on professions, trades, callings and employment), which amounted to 1.8% of SOTR for Telangana and 6.8% of SOTR for India GS on average from 2016-17 to 2019-20 RE, have been excluded from this analysis

Figure 3.4

Comparison of tax revenue compounded annual growth rates (CAGR) for Telangana and India GS (2016-19)

Growth in tax revenue (%)



Source: RBI State Finances: A Study of Budgets (various years)

BE (Budget Estimates). Revenue receipts constituted 80.1% of the total receipts profile.

During 2016-19, within revenue receipts, the state's own revenue (sum of state's own tax and non-tax revenue, as shown in Figure 3.2), has accounted for 72.9%. This is higher than the average of India GS, which stood at 56.9%. The state's own tax revenue constitutes 62.7% of revenue receipts, which is significantly higher than the India GS average of 48.7%, reflecting the state's revenue self-sufficiency in comparison with other states. Within SOTR, sales tax³ (39.0%) and state goods and services tax (33.1%) are the largest components along the lines of the India GS average (Figure 3.3).

3.2.1.2 Tax Growth and Buoyancy

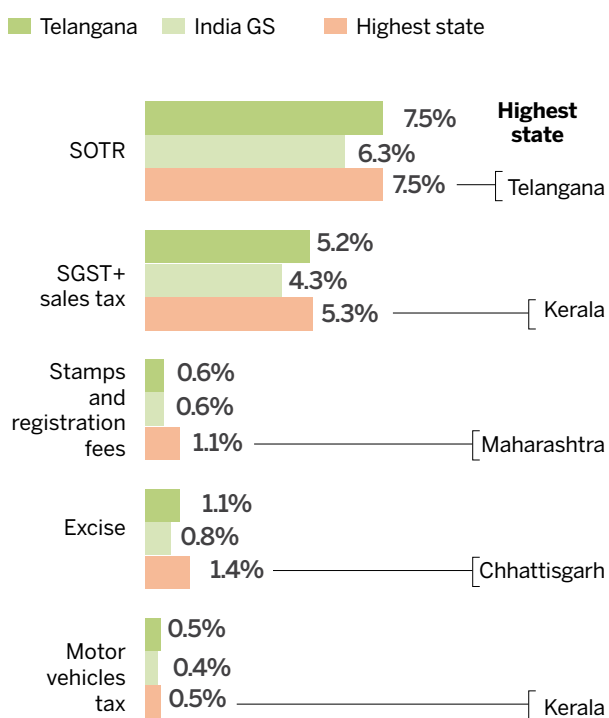
The state exceeded the India GS growth rate across SOTR, stamps and registration fees, and excise, and registered similar growth rates in sales tax + SGST (Figure 3.4). It is also noteworthy that the state recorded the highest SOTR growth rate post its formation amongst the GS between 2014-19, at a compounded annual growth rate of 16.6%.

³ Sales tax is constituted by Value Added Tax (VAT), central sales tax, surcharges on sales tax, receipts of turnover tax and other receipts. For Telangana, VAT constituted an average of 95.3% of sales tax in 2016-19. For India GS, it amounts to 74.0% of sales tax on average in 2016-19.

Figure 3.5

Tax to GSDP ratio for Telangana and India GS (2016-19 average)

Tax to GSDP ratio (%)



Source: Revenue data - RBI State Finances: A Study of Budgets (various years), GSDP data - RBI Handbook of Statistics on Indian States (Table 17), SOTR/GSDP data - 15th Finance Commission report annexure

One measure of tax collection is the share of SOTR in the state's economic output (GSDP). The state is a top performer in overall SOTR to GSDP ratio (7.5%), as shown in Figure 3.5.

As the economy grows, SOTR should increase. The greater responsiveness of tax revenues to GSDP growth (a concept known as tax buoyancy) allows the Government to finance expenditure from its own resources without adding to debt. Tax buoyancy, measured as a ratio of growth rate of tax revenue to the growth rate of GSDP (in current prices), stood at 1.4 between 2016-19, which was higher than India GS average of 1.3 (Figure 3.6).

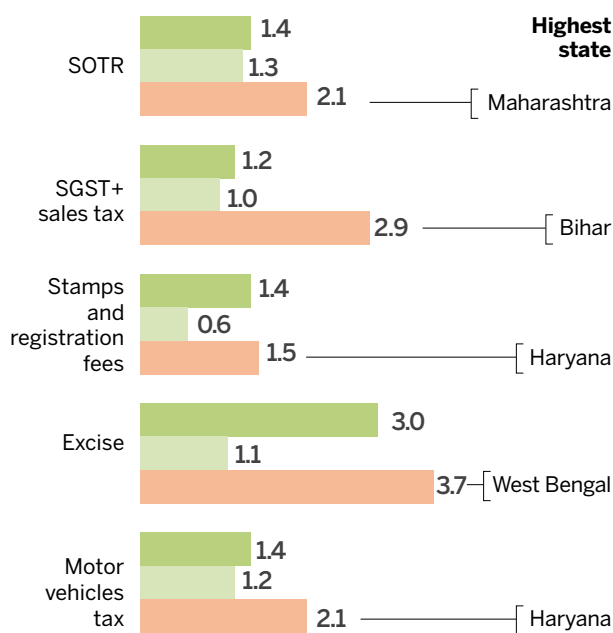
3.2.2 Expenditure

The Government's relative better management of

Figure 3.6

Tax buoyancy for Telangana and India GS (2016-19 average)

Telangana India GS Highest state



Source: Revenue data- RBI State Finances: A Study of Budgets (various years), GSDP data - RBI Handbook of Statistics on Indian States (Table 17)

resources has allowed it to invest in a plethora of schemes and programmes for the benefit of citizens. In 2020-21, the Government presented budget estimates of Rs. 1,82,914 crore of expenditure, which was channelized into implementing programmes like Rythu Bandhu, Asara pensions and Kalyana Lakshmi, building capital assets that yield returns for the state in the years to come and ensuring the efficient functioning of the Government.

3.2.2.1 Composition

Government expenditure can be categorized into revenue expenditure and capital expenditure. Revenue expenditure refers to expenditure that is incurred for regular functioning of the Government. It includes salaries, administrative expenses, disbursements to scheme beneficiaries, etc. This also includes

expenditures which support creation of assets by the society at large (e.g. industrial subsidies, incentives for micro-irrigation, agricultural mechanisation, etc.). Historically, revenue expenditure accounts for the bulk of the expenditure by states.

Capital expenditure broadly refers to expenditure that creates assets, reduces liabilities and includes capital outlay. Capital outlay includes expenditure on creating assets owned by the Government mainly on infrastructure creation. In this analysis, only the capital outlay⁴ part of the capital expenditure is focused upon. While revenue expenditure was estimated at Rs. 1,38,670 crore, capital outlay was estimated at Rs. 22,061 crore, as per 2020-21 BE.

During 2016-19, the state's share of capital outlay in total expenditure, considered as the sum of revenue expenditure and capital outlay, is at 23.2%, which was higher than the average share of 14.8% for India GS

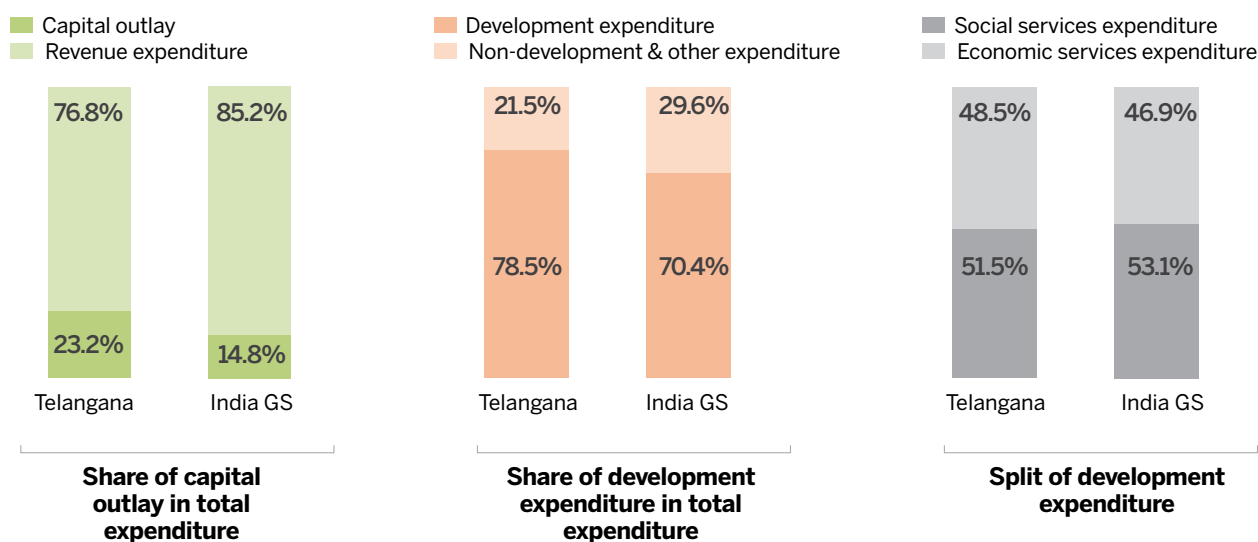
and has increased steadily since the formation of the state. This reflects the state's focus on infrastructure development and asset creation for economic growth of the state (Figure 3.7). The capital outlay share in the state was the highest in India GS.

Development and Non-Development Expenditure: Expenditure data is disaggregated into development and non-development expenditure. While social and economic services constitute development expenditure, non-development expenditure includes general services like fiscal services, interest payments, servicing of debt, loans and administrative services. During 2016-19, inter-state comparisons showed that the state spent more on development expenditure (78.5%) as a share of the total expenditure, compared to the average of India GS, which stood at 70.4%.

Expenditure on Social and Economic Services: Development expenditure is split into social services,

Figure 3.7

Expenditure composition for Telangana and India GS (2016-19 average)



Note: Total expenditure is calculated as a sum of revenue expenditure and capital outlay

Source: RBI State Finances: A Study of Budgets (various years)

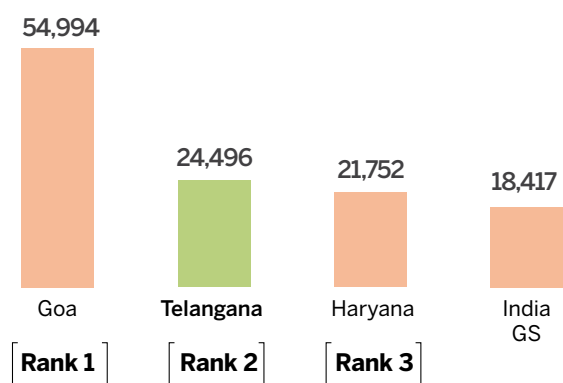
⁴ Beyond capital outlay, capital expenditure includes: (i) Discharge of Internal Debt, (ii) Repayment of Loans to the Centre, (iii) Loans and Advances by State Governments, (iv) Inter-State Settlement, (v) Contingency Fund, (vi) State Provident Fund, (vii) Reserve Funds, (viii) Deposits and Advances, (ix) Suspense and Miscellaneous, (x) Appropriation to Contingency Fund, and (xi) Remittances as compiled by RBI.

which include sectors like education, health, housing, social security and urban development, and economic services, which include sectors like agriculture, rural development, energy, irrigation and transport. During 2016-19, the state's expenditure on economic services as a share of development expenditure was 51.5%, which was close to the share of India GS at 53.1%. This indicates that the state adopted a balanced spending approach between economic growth and social welfare, like the other states.

3.2.2.2 Per Capita Development Expenditure

The state has the second highest average per capita development expenditure at Rs. 24,496 when compared with Rs. 18,417 for India GS during 2016-19, indicating that the state is at the forefront among other states in terms of its focus on social and economic services (Figure 3.8).

Figure 3.8
Inter-state comparison of per capita development expenditure (2016-19 average) (in Rs.)

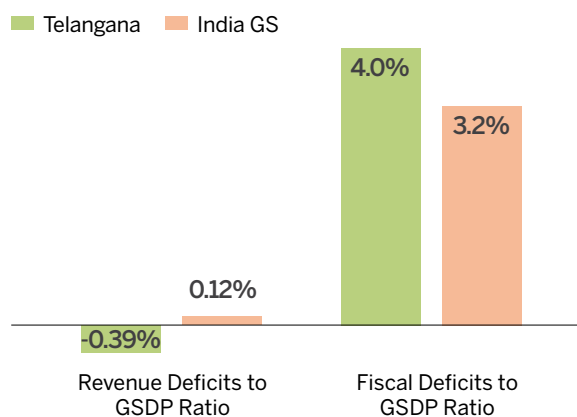


Source: RBI State Finances: A Study of Budgets (various years)
Population Projections for India and states 2011 - 2036, Ministry of Health and Family Welfare

3.2.3 Deficits and Debt

When expenditure exceeds receipts, governments incur a deficit. For the year 2020-21 BE, the state

Figure 3.9
Deficits, as % of GSDP, for Telangana and India GS (2016-19 average)



Source: RBI State Finances: A Study of Budgets (various years)
GSDP data - RBI Handbook of Statistics on Indian States (Table 17)

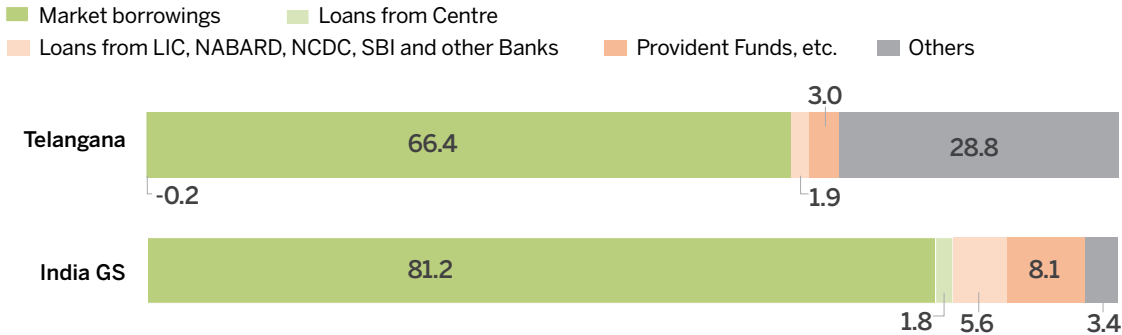
estimated a revenue surplus of Rs. 4,482 crore (i.e. revenue receipts exceeded revenue expenditure), and a fiscal deficit of Rs. 33,191 crore for the year 2020-21 BE (i.e. overall expenditure exceeded overall receipts, excluding borrowings).

The state has been registering revenue surplus since its formation. A consistent revenue surplus implies that the state is self-sufficient to meet its own revenue expenditure. It also means that it is fiscally disciplined to ensure that capital receipts (borrowings and other sources) are not being deployed for revenue expenditure. During 2016-19, the state had a revenue surplus of 0.39% while India GS had a revenue deficit of 0.12% (Figure 3.9). The average fiscal deficit during this period for the state was 4.0% against 3.2% for India GS. However, it may be noted that around 1.4% of GSDP was accounted for by Ujwal DISCOM Assurance Yojana (UDAY) related liabilities in 2016-17⁵. Further, Telangana fulfilled the conditions laid down by the 14th Finance Commission for additional borrowing. Therefore, this higher deficit is owing to its performance on the fiscal front.

5 Under the UDAY scheme, exemption was given to states for absorbing liabilities of DISCOMS from the FRBM limits on fiscal deficit.

Figure 3.10

Composition of Fiscal Deficit in % in Telangana and India GS (2016-19 average)



Source: RBI State Finances: A Study of Budgets (various years)

Note: 1 Others include Special Securities issued to the National Small Savings Fund (NSSF), Reserve Funds, Deposits and Advances, Suspense and Miscellaneous, Remittances, and Overall Surplus (-)/ Deficit (+). 2 Due to rounding off, the figures may not add up to exactly 100%

3.2.3.1 Financing the Fiscal Deficit

The major source of financing fiscal deficit is market borrowings. During 2016-19, 66.4% of the state’s fiscal deficit was financed by market borrowings (Figure 3.10).

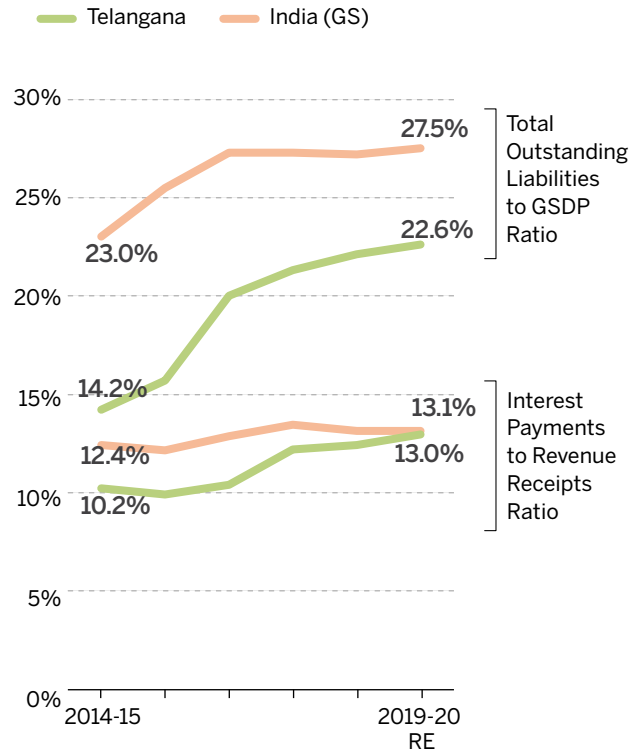
3.2.3.2 Debt Sustainability

As long as a government is able to reap returns at a faster rate than the interest rate of borrowings, it is beneficial for the state to borrow. However, it is imperative to track the ability of the state to service its debt in terms of servicing the interest burden as well as repaying the debt. Debt sustainability is assessed using parameters, such as ratio of interest payments to revenue receipts and debt to GSDP. For the period 2015-20, the 14th Finance Commission recommended limits for the states, taking into account the financial health of the state.

During 2016-19, the average interest payments to revenue receipts ratio for the state (11.7%) was lower than the ratio for India GS (13.1%). This means that Telangana is able to meet its interest obligations out of its revenue resources far better than other states. Similarly, during this period, the average debt to GSDP ratio for the state was 21.1% for the period 2016-19, while it was 27.3% for India GS (Figure 3.11).

Figure 3.11

Debt sustainability parameters in Telangana and India GS



Source: RBI State Finances: A Study of Budgets (various years)

These parameters will be significantly impacted due to the additional borrowings which the state had to resort to during COVID-19 under the Aatma Nirbhar Bharat Abhiyan, like the other states.

3.3 Implications of 15th Finance Commission

A significant influencing factor on state finances is the impact of recommendations of Union Finance Commissions (FC). The FC is a constitutional body that determines the method and formula for distributing tax proceeds between the union and the states, and among the states, by way of a share in taxes or specific amounts as grants. Broadly, 15th FC recommended to the Government of India, various transfers to the states (see Box 3.1). Following which, the decisions of the Government of India on the recommendations of 15th FC are placed in an Action Taken Report (ATR) and presented in the Parliament, as per the Constitutional provisions. The implications of the recommendations of 15th FC for Telangana are highlighted below.

3.3.1 Devolution

Vertical Devolution: 15th FC recommended that vertical devolution of the union's shareable taxes be maintained at 41.0% for the period 2021-26, as it had recommended for 2020-21.

Horizontal Devolution: Allocation of this 41% between states would be determined by different parameters; 15th FC has added two new parameters—demographic performance in terms of variation in total fertility rate and state tax and fiscal efforts, and changed the weights of the previous parameters recommended by 14th FC. Additionally, it used population census of 2011, as prescribed in its terms of reference, as opposed to the 1971 census adopted by 14th FC (Figure 3.12 for weights and comparison with 14th FC considerations).

As a result, Telangana's share in central taxes has decreased to 2.102% for 2021-26, which follows a reduction from 2.437% in 2015-20 to 2.133% in 2020-21. The state's share has decreased because its income

Box 3.1

Finance Commission Implications for State Finances

- 1. Vertical Devolution:** This refers to the distribution of net proceeds of taxes of the union between the union and the states. This is recommended as a fixed percentage, and therefore, the actual amounts of devolution vary with respect to the Government of India's financial situation, keeping this percentage fixed. States benefit from higher taxes received by the Centre, while they lose if the tax proceeds to the Centre decrease.
- 2. Horizontal Devolution:** This refers to the shares of each state, of the amount to be devolved from the Government of India to the states.
- 3. Local Bodies Grants:** Grants recommended by FC to rural and urban local bodies, as a specific amount.
- 4. Disaster Management Grants:** Grants recommended by FC to be provided to states for disaster management and relief, with a specified sharing pattern, as a specific amount.
- 5. Revenue Deficit Grants:** Grants recommended by FC to be provided to states which are projected to have revenue deficits during any of the years in the 5 year period.
- 6. Sector-Specific Grants:** Grants recommended by FC to be earmarked to specific sectors, as a specific amount.
- 7. State-Specific Grants:** Grants recommended by FC to be provided to states for specified purposes, as a specific amount.

Figure 3.12

Criteria and Weights (%) in Finance Commissions

	14th FC (2015-20)	15th FC (2021-26)
Income Distance	50.0	45.0
Area	15.0	15.0
Population (1971)	17.5	NA
Population (2011)	10.0	15.0
Demographic Performance	NA	12.5
Forest and Ecology	7.5	10.0
Tax and fiscal efforts	NA	2.5

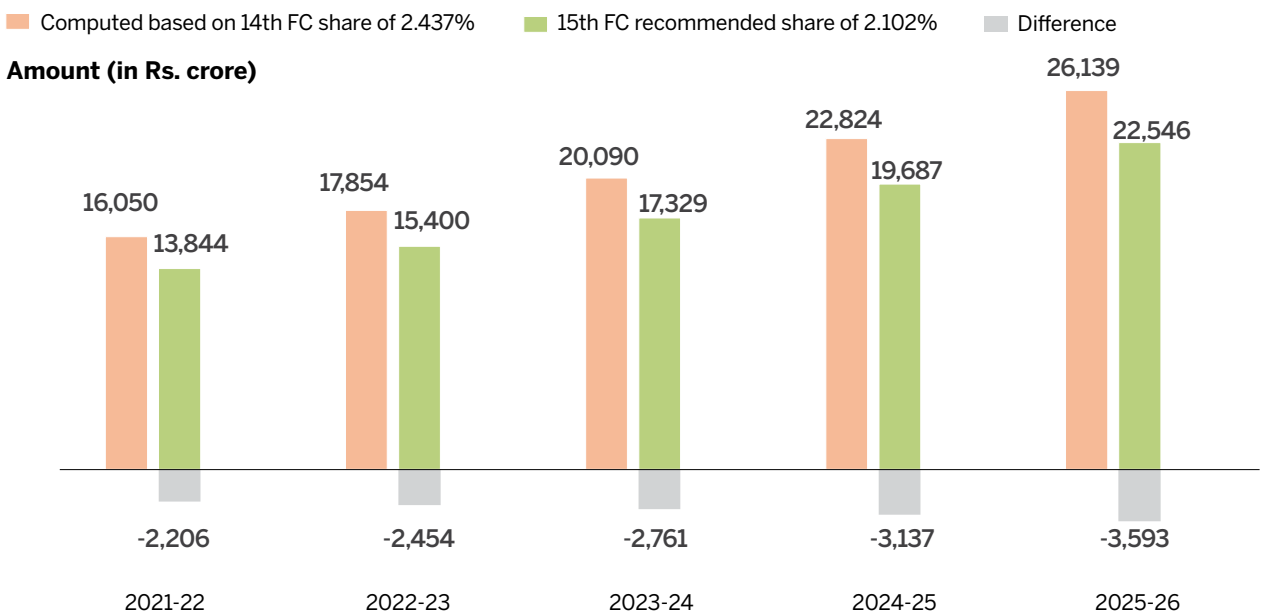
Source: Report of 15th Finance Commission for 2021-26

has been growing at a much faster rate than the Indian average, which has resulted in a lower weightage in the horizontal devolution share for the state.

It is estimated that this would result in a loss of Rs. 14,151 crore for the next five years, considering the estimated divisible pool available with the Government of India during the period 2021-26 (Figure 3.13). This is due to an estimated reduction of the state's share from Rs. 1,02,957 crore (computed based on 2.437%) to Rs. 88,806 crore, as estimated by 15th FC. In contrast, the average gain in share for each of the states in India GS would be 0.058% which translates to a gain of Rs. 2,452 crore when benchmarked against the state wise shares recommended by 14th FC (Figure 3.13).

Figure 3.13

Implications of 15th FC for tax devolution to Telangana



Note: A total of Rs. 6,65,563 crore is provisioned to be devolved to states in union budget 2021-22 BE. Of this amount, 2.102%, Rs. 13,990 crore, has been provisioned for Telangana.

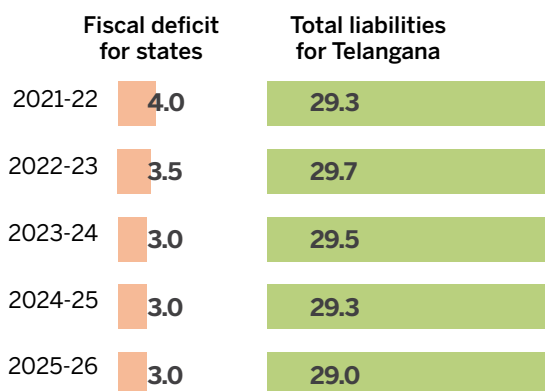
Source: 14th Finance Commission and 15th Finance Commission Report for 2021-26

3.3.2 Fiscal Sustainability

It was recommended by 15th FC that the states be allowed to raise loans up to 4.0% of the GSDP in 2021-22, with a phased reduction to 3.0% in 2025-26, in view of the adverse economic impact of COVID-19 (Figure 3.14). Considering the centrality of the financial strength of DISCOMs to the soundness of state finances, 15th FC recommended an additional conditional borrowing space of 0.5% of GSDP for states, during the four-year period from 2021-22 to 2024-25, beyond the recommended limits for fiscal deficit.

Figure 3.14

Recommended limits - deficit and debt path (% of GSDP)



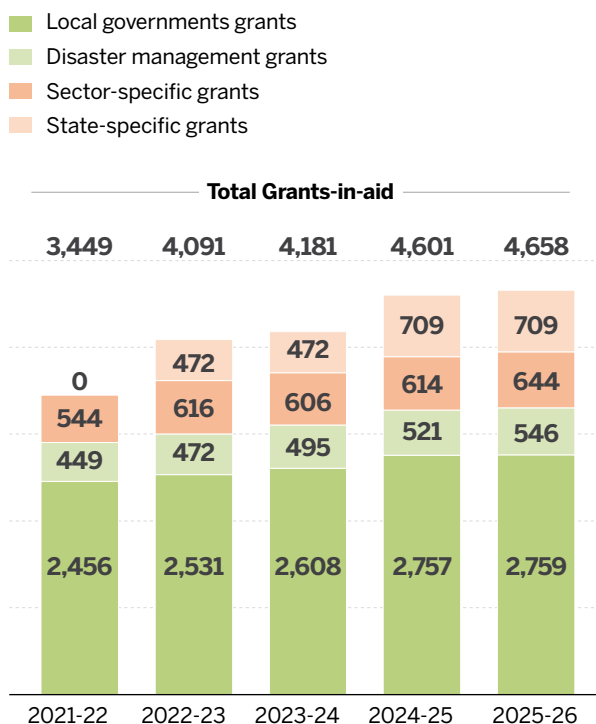
Source: Report of 15th Finance Commission for 2021-26

3.3.3 Grants

Additionally, 15th FC has recommended Rs. 20,980 crore as total grants-in-aid for the state for the next five years (2021-22 to 2025-26). Total grants-in-aids for the state includes grants to local bodies (Rs. 13,111 crore), disaster management grants (Rs. 2,483 crore), state specific grants (Rs. 2,362 crore), and sector specific grants⁶ (Rs. 3,024 crore) for the next five years (Figure 3.15). These amounts correspond

Figure 3.15

Year wise recommendations of grants for the state (in Rs. crore)



Source: Report of 15th Finance Commission for 2021-26

to 3.00% of total local bodies grants, 2.03% of total disaster management grants, 4.76% of total state specific grants, 2.33% of total sector specific grants recommended by the FC. On an overall basis, the grants recommended to Telangana constitute 2.03% of the grants recommended to all the states.

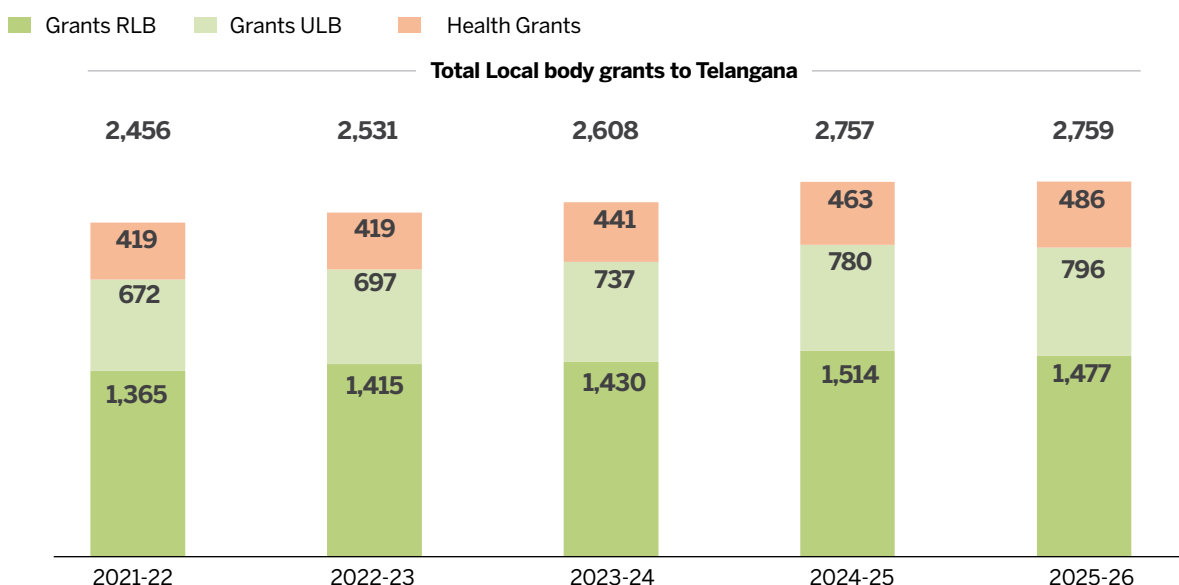
3.3.3.1 Grants to Local Bodies

The 15th FC recommended Rs. 4,36,361 crore for the country as local bodies grants for the 5 year period, i.e 2021-22 to 2025-26. Out of this, Rs. 13,111 crore is recommended for Telangana. This amount as a share of the total local bodies grants is the same as that recommended by 15th FC for 2020-21 and 14th FC for 2015-20. This is because the basis of recommendation

⁶ In sector specific grants, for the component 'Implementation of agricultural reforms', equal devolution for 5 years (1,665/5 = 333) is assumed, since year wise distribution of amount (Rs. 1,665 crore) is not available.

Figure 3.16

Local bodies grants recommended by 15th FC for the state (in Rs. crore)



Source: Report of 15th Finance Commission for 2021-26

was the same, with a 90% weightage for population and 10% weightage for area.

Of the amount recommended for Telangana, rural local bodies grants amount to Rs. 7,201 crore, urban local bodies grants amount to Rs. 3,682 crore and health grants amount to Rs 2,228 crore (Figure 3.16). The recommendation of grants for the health sector as part of local bodies grants, reflect the COVID-19 related priorities.

Grants for Rural Local Bodies: Within the grants recommended for rural local bodies, 15th FC has recommended that grants be provided for all tiers—village, mandal and district. The shares amongst these three tiers shall be decided by state Government on the basis of the State Finance Commission (SFC) recommendations and in conformity with the following bands: (a) not less than 70% and not more than 85% for Gram Panchayats, (b) not less than 10% and not more than 25% for Block Panchayats, and (c) not less than 5% and not more than 15% for Zilla Panchayats, subject to the shares adding up to 100 per cent. Once

the state-level grants are earmarked for each tier, the intra-tier distribution among the relevant entities across the state should be on the basis of population and area in the ratio of 90:10 or as per the accepted recommendations of the latest SFC.

The eligibility criteria for rural local bodies to avail grants, as laid down by the 15 FC report, are as follows:

- “In the first and second year of the award period (2021-22 and 2022-23), States need to ensure that at least 25 per cent of the rural local bodies have both their provisional accounts for the previous year and audited accounts for the year before the previous available online in the public domain in order for them to avail of the full grants in that year”.
- “From the third year (2023-24) onwards, States will receive total grants due to the rural local bodies having both provisional accounts of the previous year and audited accounts for the year before previous and making these available online. For example, if for a particular State, only 35 per cent

of rural local bodies have both provisional accounts for the year 2022-23 and audited accounts for the year 2021-22 and these are available online in 2023-24, then in 2023-24, the State will receive total amount due to these 35 per cent of rural local bodies for the year 2023-24.”

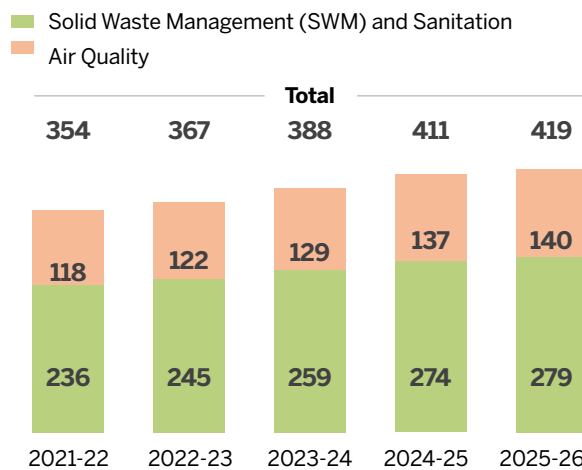
For the rural local bodies, 40% of the grant shall be untied, 30% shall be earmarked for drinking water, rainwater harvesting and water recycling, and 30% shall be earmarked for sanitation and maintenance of Open Defecation Free (ODF) status, and this should include management and treatment of household waste, and human excreta and faecal sludge management in particular.

Grants for Urban Local Bodies: The eligibility criteria for urban local bodies to avail grants, as laid down by the 15 FC report, are as follows:

- “In the first year of the award period, that is 2021-22, a State needs to ensure online availability of at least 25 per cent of both unaudited urban local body accounts for the previous year and audited accounts for the year before the previous to avail the full grants in that year. States are also expected to notify the floor rates of property tax and operationalise the relevant arrangements in 2021-22.”
- “The condition of notifying the floor rates of property tax will apply for eligibility of grants from 2022-23 along with which a State needs to ensure online availability of at least 25 per cent of both unaudited urban local body accounts for the previous year and audited accounts for the year before the previous to avail the full grants in that year.”
- For the years 2023-24, 2024-25 and 2025-26, the criteria is as follows:
 - “State has notified minimum floor rate of property tax by 2022-23”;
 - “Urban local body has met the condition of consistent improvement in collection in tandem with the growth rate of State's own GSDP”;
 - “Unaudited annual accounts of the previous year and audited online accounts for year before previous available.”

Figure 3.17

Conditional grant to Hyderabad (GHMC) by 15th FC (in Rs. crore)



Source: Report of 15th Finance Commission for 2021-26

The utilisation patterns have been differentiated for million plus cities and non-million plus cities. For the urban local bodies (non-million plus cities), 40% of the grant shall be untied, 30% shall be earmarked for drinking water, rainwater harvesting and water recycling, and 30% shall be earmarked for sanitation (including solid waste and waste water management), solid waste management, and attainment of star ratings as developed by the Ministry of Housing and Urban Affairs, Government of India.

Million plus cities: As stated above, the 15th FC adopted a differentiated approach in the allocation of grants to urban local bodies. Given the importance of metropolitan areas, 50 million-plus cities are provided with a challenge fund of Rs. 38,196 crore over the five-year award period, out of which Hyderabad, the only million-plus city in the state is earmarked a grant of Rs. 1,939 crore over the five years (2021-26). Almost one-third of this fund, Rs. 646 crore is earmarked for achieving ambient air quality based on identified parameters, while the remaining two thirds, Rs.1,293 crore is for meeting service level benchmarks on urban drinking water supply (including rainwater harvesting and recycling), sanitation and solid waste management (Figure 3.17).

3.3.3.2 Disaster Risk Management Grants

The allocation recommended by 15th FC for the state disaster risk management fund (SDRMF) for Telangana is Rs 2,483 crore as a union share of 75.0% for the period of 5 years, out of the total quantum of Rs. 1,22,601 crore recommended under this head. This amounts to a share of 2%. The state has to allocate Rs. 827 crore as its share (25.0%) over the years 2021-26.

3.3.3.3 Revenue Deficit Grants to States

Owing to the prudent fiscal management, the state is not projected to have revenue deficits in any of the 5 years between 2021-26 and therefore a revenue deficit grant has not been recommended for Telangana.

3.3.3.4 Sector Specific Grants

The 15th FC has recommended Rs. 3,024 crore as sector specific grants for the state for the 5 year period (2021-22 to 2025-26), conditional upon performance in various areas: Rs. 624 crore for the health sector, Rs. 255 crore for maintenance of PMGSY roads, Rs. 46 crore for improving the quality of statistics, Rs. 245 crore for judiciary (fast track courts), Rs. 189 crore for higher education, and Rs. 1,665 crore for undertaking agricultural reforms—land lease reforms, improving groundwater table, increasing agricultural exports, doubling of growth in oilseeds, pulses, wood and wood based products. It has also recommended a performance-based incentive system for the power sector, which is not linked to grants but provides an additional borrowing window for states.

In the action taken report submitted by the Government of India in the Parliament, it was stated that due consideration will be given to the recommendations of 15th FC on sector specific grants, while formulating and implementing existing and new Centrally Sponsored and Central Sector Schemes.

3.3.3.5 State Specific Grants

The 15th FC has recommended Rs. 2,362 crore as state-specific grants for Telangana for the next 5 years (2021-22 to 2025-26) for the following purposes:

15th FC has recommended grants for operation and maintenance of Mission Bhagiratha, with the objective to provide safe, adequate and treated drinking water to the population. Under the Digital Telangana Programme, along with the pipes laid for water supply, optical fibre cable duct has also been laid to provide broadband services to each household; 15th FC has recommended an amount of Rs. 2,350 crore for this purpose for the next 5 years i.e 2021-22 to 2025-26.

15th FC has also recommended an amount of Rs. 12 crore for revamping the infrastructure of the Administrative Staff College of India for the next 5 years (2021-22 to 2025-26).

In the action taken report that it submitted in Parliament, the Government of India said that it will give due consideration to recommendations of 15th FC on state specific grants.

3.4 Way Forward

The risks from COVID-19 are not entirely eliminated with rise in cases in a few parts of the country, and the state continues to be cognizant of the fiscal needs. However, with the phased administration of COVID-19 vaccine, the economy, and thereby the finances, are expected to return to normalcy and the state would be able to consolidate its financial position and restore its financial prudence as exhibited during 2016-19. Doing so will ensure that the Government has the resources to continue to invest in improving welfare for all, while investing in the infrastructure required for the future.



CHAPTER 4

AGRICULTURE & ALLIED SECTORS



Key Highlights

The agriculture sector is the backbone of rural development in Telangana. Since the formation of the state, the Government of Telangana has been committed to driving the sector's growth, increasing farmers' incomes and improving farmers' welfare. To do this, the Government is promoting the agriculture sector (which includes crops, horticulture, livestock and fisheries) through various policy initiatives, e.g., improving irrigation infrastructure through flagship initiatives such as the Kaleshwaram Project and Mission Kakatiya; supplying free 24x7 power to farmers; providing investment support to farmers under Rythu Bandhu; enabling access to inputs, markets and credit; and providing life insurance under Rythu Bima. This chapter highlights the progress and impact of these major schemes and initiatives. Key highlights include:

- Despite COVID-19, agriculture production was unaffected and the sector grew by 20.9% in 2020-21. Within agriculture, crop sectoral GVA increased by 16% and livestock sector GVA increased by 28.7% at constant prices.
- As COVID-19 disrupted the usual market operations, the Government enhanced its procurement operations and purchased agricultural produce directly from the farmers. Paddy worth Rs. 9,199 crore was procured by the Government in 2020-21 (as of 1st March 2021), while cotton worth Rs. 10,167 crore was procured in the same period, which helped the farmers enormously in mitigating the impact of COVID-19.
- Overall agriculture production of the state has increased because of the support provided through the Rythu Bandhu scheme and other initiatives such as Mission Kakatiya, 24x7 free power supply, and the seed subsidy. An amount of Rs. 14,651 crore was disbursed under the Rythu Bandhu scheme during 2020-21 to around 59 lakh farmers for investment support.
- Paddy and cotton production has increased significantly; they continue to dominate as major crops produced in the state and have seen a prominent increase in production through time.
- The Government has also encouraged the cultivation of other agricultural crops. The state is now a leading producer of spices and horticulture crops (such as turmeric, chillies and oil palm).
- Recognizing the importance of livestock for contributing to rural incomes, the Government has encouraged livestock production through programmes such as the Sheep Distribution Programme and livestock products (such as eggs, meat, wool and milk).
- Rythu Bima, the farmer's group life insurance scheme, provides an essential lifeline to agricultural households struck by tragedy
- The Government is also supporting agriculture investment by increasing credit disbursement to farmers.



4.1 Importance of Agriculture

Agriculture and its allied activities are integral to Telangana's development. Not only does the sector help ensure food security, it also provides livelihoods to more than half of the state's workforce (around 55% of the workforce in the state is engaged in agriculture and allied activities¹). Given its importance, the Government has prioritized the sector's growth and farmers' welfare through several flagship initiatives. Agriculture sector output, which includes crop, livestock, forestry, and fisheries production, has grown in recent years. In 2020-21, Gross Value Added (GVA) in the agriculture sector grew by 20.9%, one of the highest growth rates in India and significantly greater than India's GVA agriculture growth of 3% (Figure 4.1a). Over the last five years (between 2016-17 and 2020-21), the state average annual GVA growth rate of agriculture at 2011-12 prices has been 14.5%.

Agriculture growth in the state has been driven by increased crop production and livestock production. The Gross Value Output (GVO) from major crops'

production (paddy, maize, cotton, groundnut, redgram, bengalgram and soyabean) in 2020-21 was Rs. 47,125 crore, an increase of 20.9% from 2019-20. Livestock production is also growing rapidly in the state. In 2018-19, the share of livestock production in the state's agriculture GVA (50.2%) overtook crop production's share in agriculture GVA (42.98%). The trend has continued in 2020-21, where livestock output, driven by improved dairy and meat production, contributed to more than half of the total growth in the sector (Figure 4.1b). This partly reflects the Government's focus on promoting other non-crop related activities (such as livestock and fisheries production) to improve rural incomes.

4.1.1 COVID-19 and Agriculture

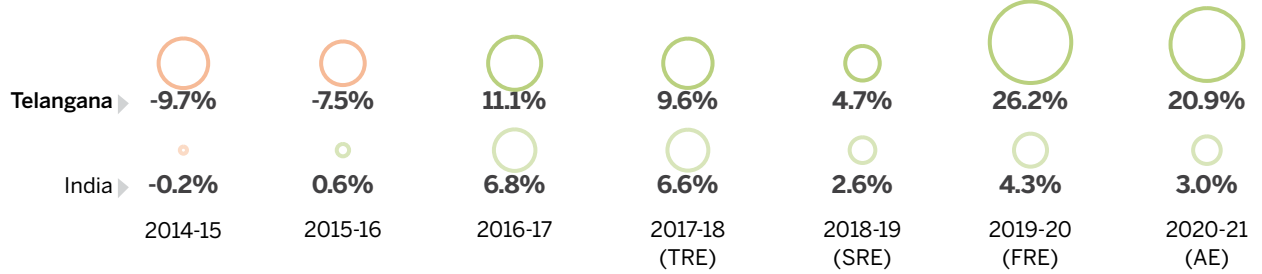
The agriculture sector was least-disrupted by COVID-19 (as highlighted by the 20.9% growth in output between 2020-21 and 2019-20). While agriculture production was not disrupted, farmers still faced several challenges in accessing markets and procuring inputs. One measure of the difficulty in accessing markets was the sharp drop in arrivals during the national lockdown between April and August 2020. Between 2017 and 2020, average paddy

¹ Census 2011

Figure 4.1a and 4.1b

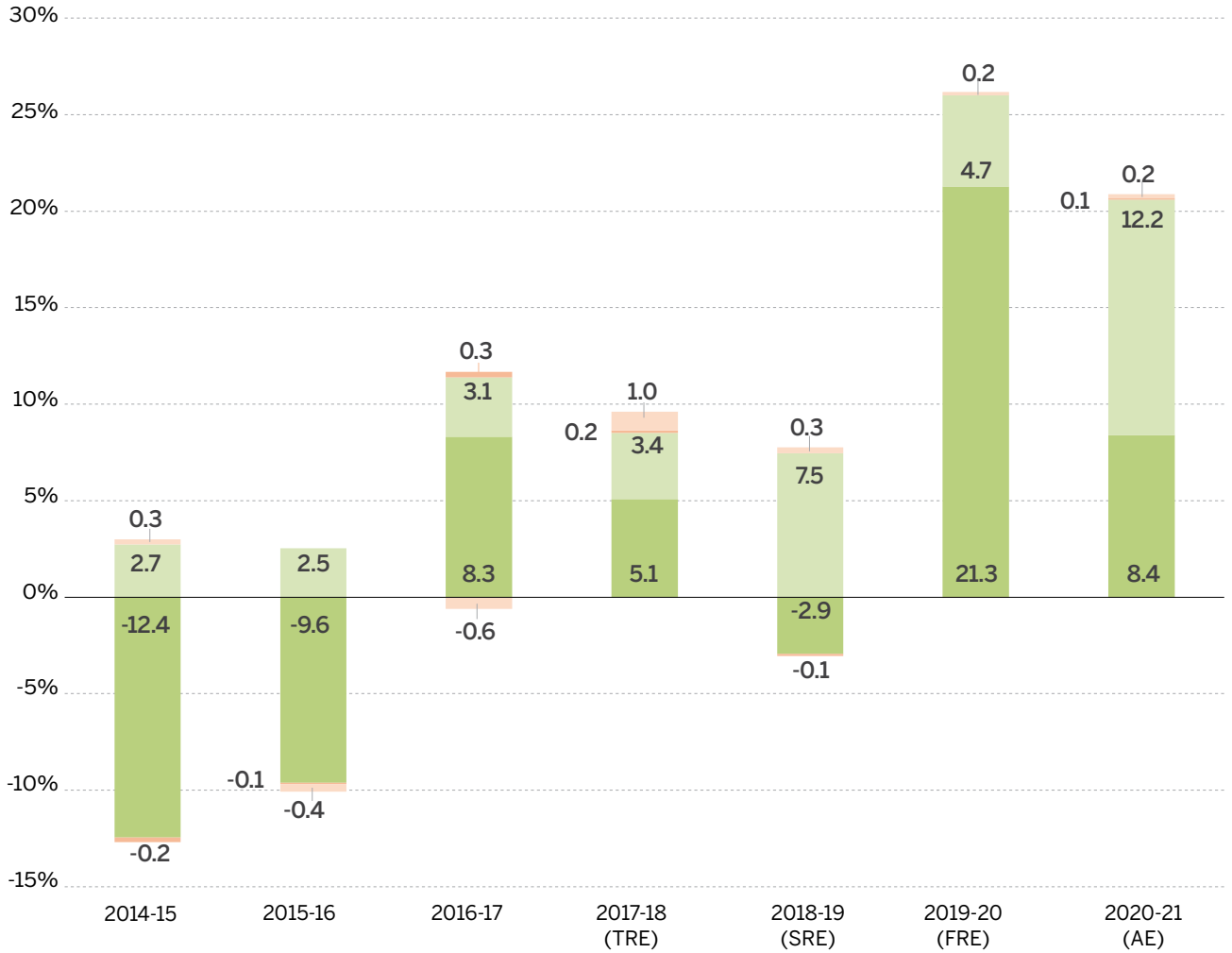
Contribution of the agriculture sector in Telangana's economic development

Growth in agriculture GSDP (Telangana average growth rate: 14.5% from 2016-17 to 2020-21)



Contribution to growth in agriculture GSDP

Legend: Crops (Dark Green), Livestock (Light Green), Forestry and logging (Orange), Fishing and aquaculture (Pink)



Source: Ministry of Statistics and Programme Implementation (GoI); Directorate of Economics and Statistics

arrivals in the state between April and August were 30,600 metric tonnes (MTs) but this fell by around 50% to 15,716 MTs in 2020.

To mitigate the COVID-19 impact on market access, the Government ensured that procurement of paddy took place during Yasangi 2019-20 and Vaanakalam 2020-21 despite the lockdown restrictions, in a safe manner. As many as 6,400 paddy purchase centres were opened, covering the entire state. Each centre was equipped with masks and sanitizers. A coupon system was introduced to minimize crowds. This enabled farmers to safely sell their produce.

In addition, the Government increased the number of Mobile Rythu Bazaars and encouraged online orders, which allowed farmers to directly sell their produce to local consumers. Nearly 500 MTs of perishable produce (mostly vegetables and fruits) was sold through Mobile Rythu Bazaars and delivered directly to consumers' homes. Registered farmers were allowed to sell their produce at a slightly higher rate (Rs. 5 above the regular market rate). Mobile vehicles were also hired to transport produce to consumers in 627 locations in the state.

4.2 Inputs for Agriculture

Broadly, farmer incomes are dependent on crop yields and access to markets. Yield itself is determined by various agriculture inputs such as water, power, fertilizer, seeds, labour and mechanization.

4.2.1 Investment Support via the Rythu Bandhu Scheme

In 2018, to support farmers in accessing all these inputs, the Government rolled out the Rythu Bandhu Scheme which provided investment support of Rs. 4,000 per acre per season to landowning farmers. Subsequently in 2019, the amount was increased to Rs. 5,000 per acre per season (Figure 4.2). A notable feature of the scheme is the ease of access for beneficiaries ('na darkaz, na daftaar'). Implementation relies on pre-existing land records and direct transfers to bank accounts without the need for beneficiaries to apply with cumbersome documentation or visits to Government offices. This marks a new paradigm of designing development schemes focused on ensuring minimal or no costs to beneficiaries for accessing the scheme benefits.

In the 2020-21 budget, 75.4% of the agricultural budget and 7.7% of the total budget was earmarked for the Rythu Bandhu Scheme. Further, the Government has transferred an amount of Rs. 14,651 crore directly into the bank accounts of pattadars through direct cash transfers.

4.2.1.1 Success of the Rythu Bandhu Scheme

In 2020, 90% of the Rythu Bandhu Scheme beneficiaries were marginal and small farmers (i.e. farmers with landholdings less than 4.94 acres) and only 0.1% were large farmers. This highlights how the scheme has benefited the farmers who need investment support the most.

Figure 4.2

Rythu Bandhu Scheme disbursements

	Pattadars (in lakh)	Amount (in Rs. crore)
2018-19	50.3	10,488
2019-20	51.6	10,532
2020-21	59.3	14,651
Grand Total		35,671

Source: Department of Agriculture

Box 4.1

Impact of Investment Support Schemes and Cash Transfers on Farmer Welfare

Studies from around the world have shown that investment support schemes like Rythu Bandhu can be hugely effective in improving farmer incomes and rural welfare. Cash transfers to farmers can create a multiplier effect wherein the benefits from the transfer are greater than the value of the transfer itself. This is because cash transfers help farmers invest in inputs (like mechanization or fertilizer) that increase their overall production. For example, a study of the PROCAMPO programme in Mexico (which was a direct cash transfer scheme to protect farmers against the negative effects of trade liberalisation), found a multiplier effect ranging between 1.5-2.6 for households (Sadoulet et al, 2001). These schemes also protect farmers from the negative impact of price shocks and ease liquidity constraints.

Cash transfers are also a more efficient form of farmer support compared to other forms of support such as subsidies. Studies have shown that subsidies on fertilizer and power can have distortionary effects (e.g. by affecting soil quality and water availability).

Similarly, Rythu Bandhu could have the positive externalities of improving other development outcomes. Studies have shown that when the agricultural sowing calendar and academic

calendar overlap, families are often compelled to ration their savings for agriculture and children's education. With farmers getting investment support for agriculture, farmers can use a greater share of their own savings to invest in their children's education. In fact, systematic reviews and studies carried out in Latin America and several Sub-Saharan African countries show that cash transfers lead to better human capital development with increase in education, health and general family welfare (Tirivayi et al, 2016). Given these findings, it is likely that the Rythu Bandhu scheme has had a similarly positive effect on farmer welfare in the state while also increasing investments in human development.

References

de Janvry, A. and Sadoulet, E., 2001. Income Strategies Among Rural Households in Mexico: The Role of Off-farm Activities. University of California, Berkeley. Available at: <http://bit.ly/3bGEaxA>

Tirivayi, N., Knowles, M. and Davis, B., 2016. The interaction between social protection and agriculture: A review of evidence. Elsevier B.V. Available at: <http://bit.ly/3qAckHy> .

The Government has received national and international praise for the Rythu Bandhu Scheme. Since its introduction, Rythu Bandhu has also inspired other direct income support schemes for farmers across the country. On similar lines, the Government of

India launched the PM-KISAN in February 2019, which transfers Rs. 6,000 to small and marginal farmer families having combined land holding or ownership of upto 4.94 acres.

Table 4.1**A comparative analysis of Rythu Bandhu with similar schemes in other states**

State	Scheme	Year of launch	Provisions	Spending [as % of state's total expenditure in 2019-20 (RE)]
Telangana	Rythu Bandhu	2018-19	Rs. 10,000 per acre per year to land-holding farmer as investment to agriculture and horticulture	8%
Andhra Pradesh	Rythu Bharosa	2019-20	Rs. 7,500 per farmer family per year, including tenants to support crop investment (regardless of land size)	5%
Odisha	KALIA	2018-19 to 2021-22	For cultivators: Rs. 10,000 per farmer family as assistance for cultivation. For landless agricultural households: Rs. 12,500 to each landless household for agricultural allied and activities	4%
Jharkhand	Mukhyamantri Krishi Aashirvaad Yojana	2019-20	Rs 5,000 provided to marginal and small farmers per acre per year(max upto 5 acres)	2%
West Bengal	Krishak Bandhu	2019-20	Farmers with one or more acre land-holding entitled for Rs 5,000 per annum assistance, with minimum Rs 2,000 per annum assistance on pro rata basis.	1%

Source: PRS Legislative Research; Government documents of various states

Governments of other states such as Odisha, Andhra Pradesh, Jharkhand and West Bengal have also launched similar schemes but, in terms of fiscal outlay, Rythu Bandhu remains the biggest (Table 4.1).

4.2.2 Area

The land brought under cultivation in the state has increased in recent years. In 2014-15, the net area sown in the state was 108 lakh acres but this has increased to 136 lakh acres in 2019-20 (a 26% increase). This increase can be attributed to the sustained investment in irrigation projects and paddy procurement by the Government, which has made it possible for farmers to cultivate paddy in both seasons of the year. However, even as the overall area under cultivation has increased, individual farm sizes have decreased, a pattern mirrored across the country, where average farm land holding sizes are shrinking over time because

of inter-generational fragmentation. Currently, around 88% of all operational holdings in the state are less than 4.9 acres. According to the 2015-16 Agriculture Census, the average land size in the state is 2.5 acres, below the Indian average of 2.7 acres (Figure 4.3).

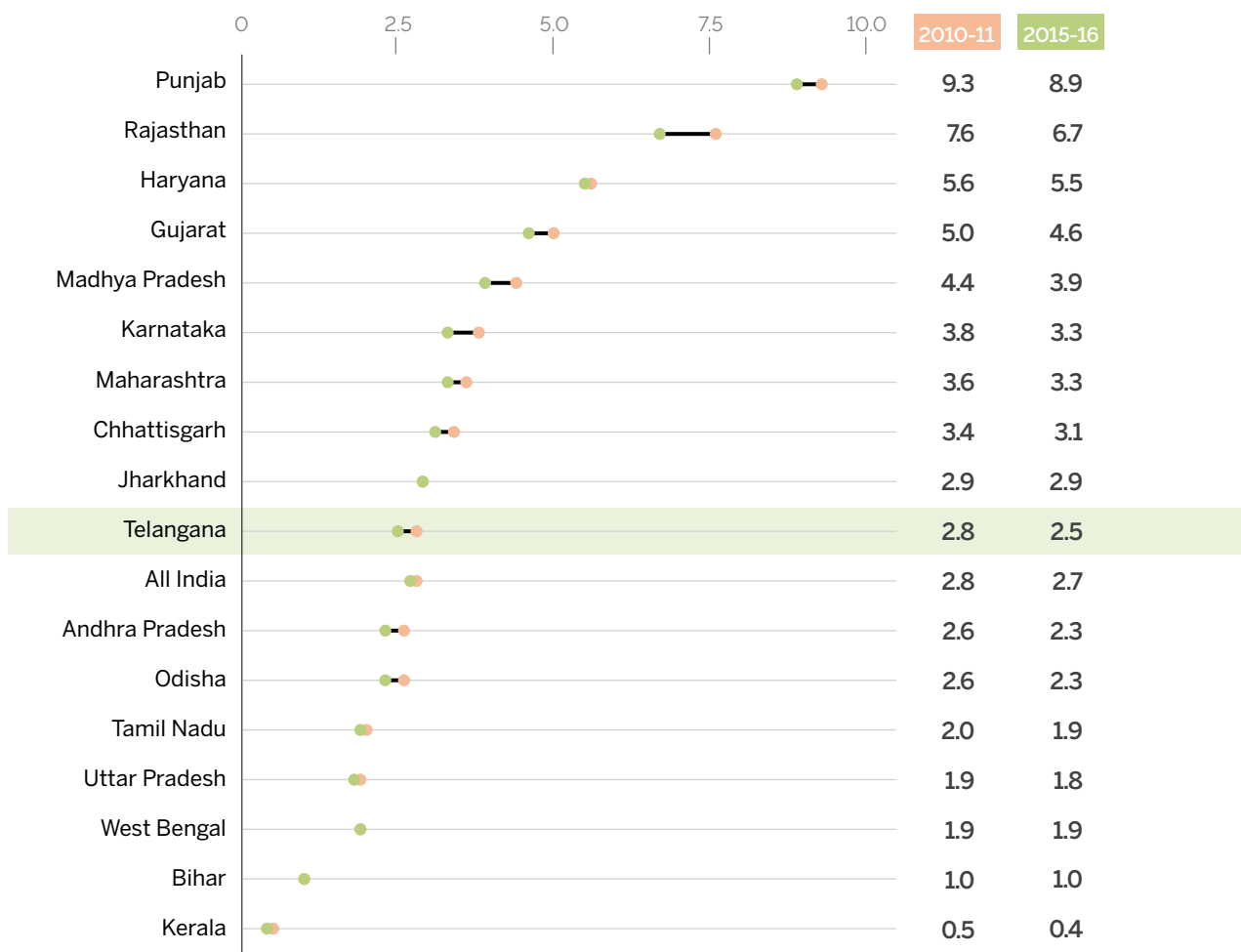
Within the state, farm sizes are larger in the northern and eastern parts of the state. The average landholding size in Adilabad and Kumuram Bheem districts is more than three acres. In contrast, districts in central Telangana (such as Jagitial, Medak, Kamareddy and Karimnagar) have far smaller landholdings (Figure 4.4).

The Government is strengthening land records across the state to make it easier for farmers to access formal credit (since this would allow farmers to use land as collateral). To do this, the Government began updating

Figure 4.3

Average landholding size within states from 2010-11 to 2015-16 (in acres)

Average landholding size among states has been decreasing over time



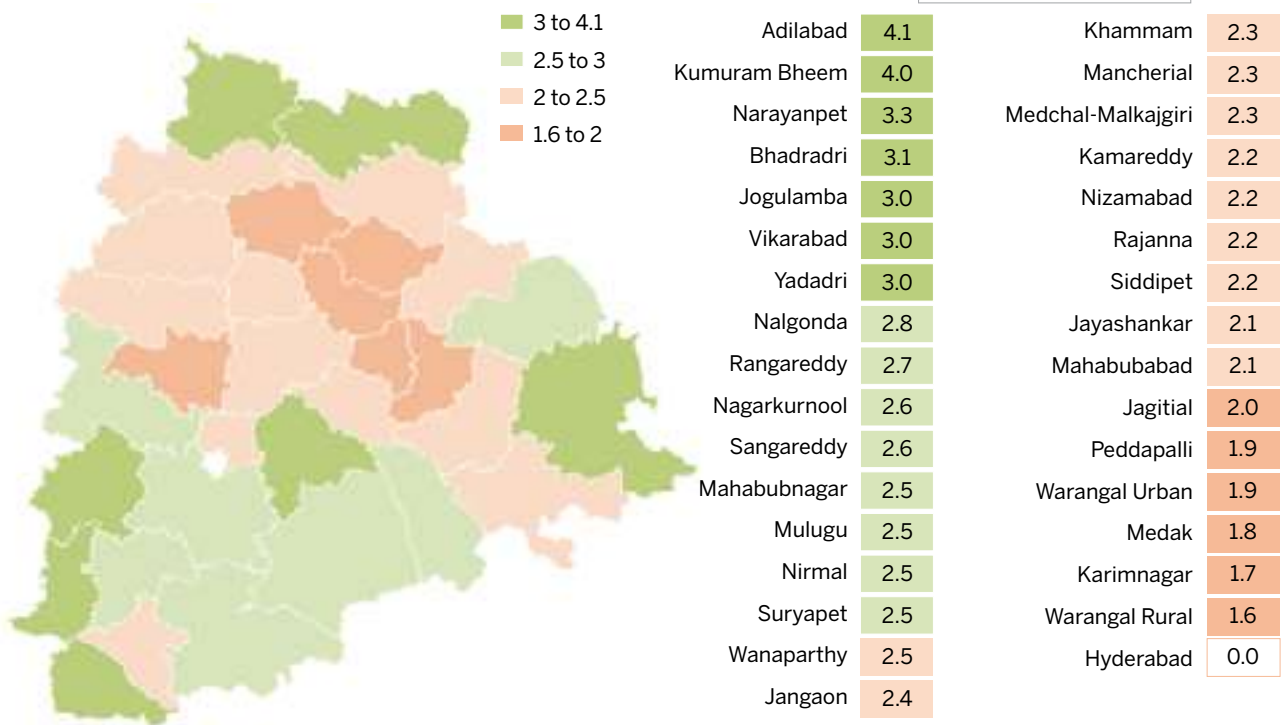
Source: Agriculture Census 2015-16 and 2010-11

Figure 4.4

District-wise average landholding size per farmer in Telangana

Smaller farms are concentrated in the central parts of the state

Average landholding size in 2015-16 (acres)



Source: Directorate of Economics and Statistics

and digitizing land records in 2017. All processes of land revenue administration, such as land transfers, updates and registrations, have been integrated with the Dharani portal. Dharani is an online integrated land records management system which combines land registration and administration services, for agricultural and non-agricultural lands. It serves as a single source to discharge land-related functions in an effective and efficient manner.

4.2.3 Irrigation: Kaleshwaram Project, Mission Kakatiya and Other Initiatives

Assured irrigation is critical for crop cultivation and farmer incomes because it boosts productivity and protects farmers from poor monsoons. In addition, assured irrigation can improve water usage efficiency and help maintain groundwater level. This

is increasingly important given rapidly depleting groundwater levels across the state.

The state has made enormous strides on the development and strengthening of irrigation facilities. More than 50% of net sown area in 2019-20 in the state is irrigated (up from 39% in 2014-15). This places the state's farms among the most irrigated in the country. The increase has been driven by the Government's efforts to augment water resources in the state on a priority basis. Specifically, the Irrigation and CAD Department has been restructured to provide water to at least one crore acres of land. To achieve this, the Government has made big investments on various projects, which include (see annexure for more details):

- Re-engineering existing projects to make them more effective in terms of water availability and

wider coverage. These include the Pranahita Chevella Project (taken up as the Pranahita and Kaleshwaram Projects); the J. Chokka Rao Devadula Lift Irrigation Scheme (LIS) and Sitarama LIS (an integration of two planned projects)

- Modernizing and restoring existing irrigation systems (e.g. in Nagarjunasagar, Nizamsagar, Kadam, Rajolibanda Diversion Scheme, etc.)
- Completing projects contemplated prior to state formation, i.e., Palamuru-Rangareddy LIS and Dindi LIS
- Signing landmark agreements with Maharashtra to expedite completion of Pranahita, Kaleshwaram, Chanaka-Korata and Lendi projects in the Godavari Basin
- Increasing budget support for expeditious completion of irrigation projects by seeking Government of India funding to augment state budgets
- Adopting a new approach to land acquisition, resettlement and rehabilitation
- Increasing the use of sustainable methods of irrigation (e.g. plantations in project areas, canals, check dams)

4.2.3.1 Flagship Lift Irrigation Projects: Kaleshwaram

Among all the Government's irrigation initiatives, the Kaleshwaram project is the most notable one, as it is the world's largest multi-stage, multi-purpose lift irrigation project. The objective of the project is to provide water for irrigation, restore groundwater levels, and supply water for drinking and industrial needs in various districts. Initially, the project objective was to divert 160 TMC (thousand million cubic feet) of water to irrigate 16.4 lakh acres of land across seven districts. However, after redesigning the project and constructing new barrages, this has increased significantly to 18.3 lakh acres spread over 13 districts (Karimnagar, Rajanna, Siddipet, Medak, Yadadri, Nalgonda, Nizamabad, Jagtial, Kamareddy, Sangareddy, Nirmal, Medchal-Malkajiri and Peddapalli), which include the drought-prone districts in the state.

In addition to providing irrigation to these districts, the

project also helps the Government to supply drinking water to several parts of the state through Mission Bhagiratha (see Infrastructure chapter). The total cost of this project is Rs. 1.06 lakh crore. Construction of the three main barrages (i.e., Laxmi, Saraswathi and Parvathi) along with lift systems and water conveyors were completed in record time.

4.2.3.2 Flagship Lift Irrigation Projects: Sita Rama

Another major project is the Sita Rama project which combines the Rajiv Dummugudem ayacut, the Indira Sagar Rudramkota ayacut, and an uncovered ayacut. This covers 5 lakh acres in Bhadradri, Khammam and Mahabubabad districts. The scheme shall draw water from Godavari River. The estimated cost of the project is Rs. 13,058 crore.

4.2.3.3 Flagship Lift Irrigation Projects: Palamuru – Rangareddy

The Palamuru-Rangareddy Lift Irrigation Scheme aims to irrigate an ayacut of 12.3 lakh acres in upland areas of Nagarkurnool (1 lakh acres), Mahabubnagar (4.1 lakh acres), Rangareddy (3.6 lakh acres), Vikarabad (3.2 lakh acres) and Nalgonda (0.3 lakh acres). The project will also provide drinking water to villages and the Greater Hyderabad Municipal Corporation. It will also supply water to industries by lifting 90 TMC of Krishna river water in 60 days from the foreshore of Srisailem Reservoir during flood season. The estimated cost of the project is Rs. 49,595 crore.

4.2.3.4 Mission Kakatiya and Minor-Irrigation

Another notable irrigation initiative is Mission Kakatiya, which seeks to restore the state's minor-irrigation sources. In 2014, there were 46,531 minor-irrigation sources across the state, comprising largely village tanks. Despite this, the state's irrigation potential remained unfulfilled, with only 39% of land irrigated.

To bridge the gap, Mission Kakatiya was launched in 2015, with the tagline "our village, our tank" to restore the importance of minor-irrigation tanks, strengthen community-based irrigation management, ensure

sustainable water security and increase agriculture-based income for small and marginal farmers. The Mission aims to do all this through several different initiatives, including repairing and strengthening tanks, desilting tank beds to restore the original capacity of water levels, repairing feeder channels to allow the free flow of water into tanks, and reworking irrigation channels.

The minor-irrigation tanks are primarily used for irrigation in crop cultivation and ensuring food security. However, since they are located in hydrologically favourable sites, they also serve other functions like soil and water conservation, flood control, drought mitigation, livestock rearing, fish production, domestic uses, recharge of ground water, microclimate and protecting the environment. Since its launch Mission Kakatiya has helped increase crop yields in the state, especially in paddy and cotton. Because of this success, Mission Kakatiya has received recognition and accolades nationally and internationally. For instance, Mission Kakatiya has been lauded as an “example worthy of replication” by the Dalwai Committee as a part of its recommendations in the ‘Doubling Farmers Income’ report².

Of the 46,531 tanks under Mission Kakatiya, around 70% (40,843 tanks) serve farm areas of less than 100 acres. In total, these tanks serve around 37 lakh acres and are more prevalent in southern Telangana, while minor-irrigation tanks serving over 100 acres are more prevalent in eastern and western Telangana.

The Government plans to restore all the 46,531 minor-irrigation sources over five years by taking up 20% of the tanks each year in four phases. So far, a storage capacity of 8.42 TMC has been restored and an ayacut to the extent of 7.59 lakh acres has been covered, with 15 lakh acres of ayacut stabilization left to be covered.

4.2.3.5 Micro-Irrigation

The Government is also implementing the Telangana

Box 4.2

Importance of Tank Rehabilitation Schemes such as Mission Kakatiya

Tank rehabilitation is increasingly considered an important tool for better water management and climate adaptation in India. An ongoing impact evaluation study of Mission Kakatiya (Gine et. al 2019) suggests that this programme has led to an increase in volume of water available in rehabilitated tanks compared to non-rehabilitated tanks. According to the study, villages with no surface irrigation from tanks in 2015 (pre-period) saw a significant increase in irrigated area post completion of tank rehabilitation. A greater fraction of surveyed farmers used tank water for irrigation in the rehabilitated tank areas compared to non-rehabilitated areas, after the programme. Meanwhile, there was also a higher number of days of tank irrigation among farmers in rehabilitated areas than those in non-rehabilitated areas. These findings, though preliminary, suggest that small-scale tank rehabilitation schemes, such as Mission Kakatiya, can be a crucial step towards water conservation as well as cost-effective and efficient water utilization.

References: Gine, X., Malani, A., Mahajan, A. and Rao, M., 2021. Evaluation of Mission Kakatiya: Minor Irrigation Project in Telangana. TATA Centre for Development, UChicago. Available at: <https://bit.ly/3cqKnwK>

² Committee on Doubling Farmers' Income, 2018. Comprehensive Policy Recommendations. Report of the Committee on Doubling Farmers' Income. [online] Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture & Farmers' Welfare. Available at: <https://bit.ly/38uDEAY> [Accessed 17 February 2021].

State Micro-Irrigation Project to support micro-irrigation and provide assured irrigation to farmers. Out of 43 lakh acres of net irrigated area under bore wells in the state, around 12 lakh acres were covered under micro-irrigation at the time of formation of state (2014). Recognizing the importance of micro-irrigation, the Government has extended the subsidy for micro-irrigation projects to farmers with upto 12.4 (5 hectares) acres of land—the largest such subsidy in the country. As a result, a total of 6.6 lakh acres was brought under micro-irrigation from 2014-15 to 2019-20, and the total area covered so far under micro-irrigation is 18.6 lakh acres.

4.2.3.6 Round-the-Clock Free Power for Agricultural Pumpsets

A critical complement for irrigating fields through agricultural pumpsets is power. Farmers use electricity largely to pump water and to operate lift irrigation schemes. As the Government has invested in increasing irrigation coverage, it has sought to supplement this with greater power availability for farmers. The Government is not only providing free

electricity to farmers, but also providing quality power uninterruptedly on a 24x7 basis. As of 1st December 2020, this 24x7 free power supply was given to 24.8 lakh agriculture connections.

4.2.3.7 Rainfall

Since Telangana is situated in a semi-arid region, the distribution of rainfall is a key determinant of agricultural production. Around 80% of the annual normal rainfall is delivered by the south-west monsoon from June to September. Over the last two years, annual rainfall has significantly exceeded normal levels (Figure 4.5a). This, combined with the Government's investment in irrigation infrastructure, has driven greater agriculture production.

4.2.4 Timely and Efficient Usage of Fertilizers

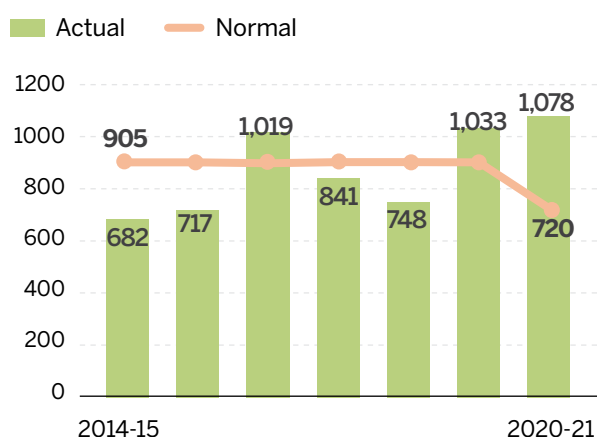
One of the most important inputs for agriculture is fertilizer. The application of the right fertilizer at the right time is crucial to increase productivity and production.

Figure 4.5a

Annual Rainfall in Telangana (mm)

The last two years have seen good monsoons

Annual rainfall in Telangana (mm)

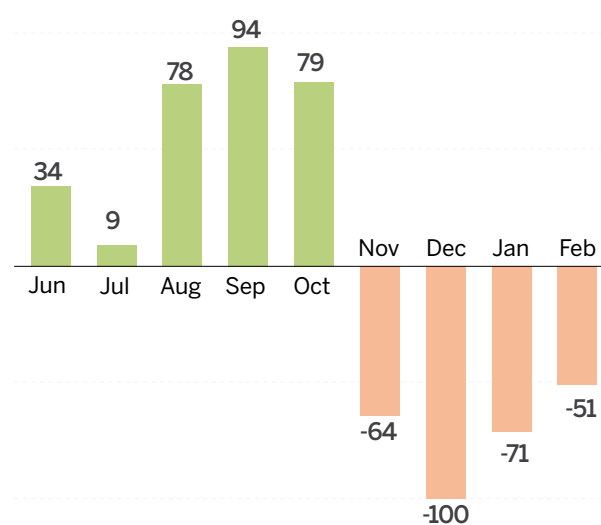


Source: Directorate of Economics and Statistics

Figure 4.5b

Rainfall data for 2020-21 (June, 2020 to February, 2021)

% deviation around the normal monthly rainfall



Source: Directorate of Economics and Statistics

In 2018-19, the state had the highest per-acre usage of fertilizers among states (Figure 4.6a). Though fertilizers may improve yields in the short-term, excessive usage can hurt soil quality and lower yields in the long run, thereby risking future farm incomes.

To address this, the Government has been taking various measures to ensure that soil health is maintained through judicious use of fertilizers. This includes strengthening existing Soil Testing Labs, conducting training and demonstrations on soil health management, distributing less-damaging micronutrients, and testing fertilizer samples at the Fertilizer Quality Control Labs at Rajendranagar, Warangal and Kothapally (Karimnagar).

In addition, the Government is distributing Soil Health Cards and disseminating knowledge on the judicious use of chemical fertilizers in conjunction with organic manures and biofertilizers. This is seen as a way to promote Integrated Nutrient Management (INM). Finally, the Government is also promoting organic farming as part of the national drive via Paramparagat Krishi Vikas Yojana Scheme (PKVY). These initiatives seem to be taking effect, as consumption of fertilizer has stabilized and fallen in recent years (Figure 4.6b).

The Government is also supporting implementation for direct benefit transfers for the Government of India's fertilizer subsidy. Under this system, the subsidy for fertilizers is released to the fertilizer companies on the basis of actual sales made by the retailers to the beneficiaries.

4.2.5 Seeds

Telangana is known as the 'seed bowl of India' due to the conducive nature of the state's soils, climate and the concerted efforts of the Government to promote seed production. The state currently fulfills 65% of the country's requirement of seeds of various kinds, such as paddy, pulses, oil seeds, fibre crops, vegetables and green manure. In 2020-21, as part of its seed distribution programme, the Government distributed around 2.2 lakh quintals of quality seeds with a subsidy value of Rs. 71.4 crore to its farmers.

In order to prevent the manufacturing and distribution of spurious seeds, the Government has formed task force teams both at the state and district levels. These teams have conducted raids on various seed processing units, storage units, godowns, transport agencies and unauthorized premises, and impose heavy fines on culprits.

4.2.6 Mechanization

Farm machinery eases farming operations and greatly improves productivity, reduces costs, eases drudgery and also addresses issues of labour scarcity in rural areas. Since farm equipment is expensive, it is difficult for smaller and marginal farmers to bear the expenses. To address this issue, through the Farm Mechanization Scheme, the Government aims to supply farm implements and machinery to farmers at subsidized costs. Under this scheme, there is a 95% subsidy for Scheduled Caste (SC) and Scheduled Tribe (ST) farmers, and a 50% subsidy to general category farmers to purchase various farm implements. The scheme is being implemented by establishing Custom Hiring Centers (CHCs) under the Normal State Plan and the Government of India's Rashtriya Krishi Vikas Yojana and Sub-Mission on Agriculture Mechanization. These CHCs provide Farm Mechanization Services and lease out high cost machinery to farmers. Charges for this machinery are decided by the respective Gram Panchayat.

4.2.7 Agricultural Research

The state is committed to adopting cutting edge practices to improve farming practices and farmer incomes. To bolster this initiative, the Professor Jayashankar Telangana State Agricultural University (PJTSAU) has been focusing on research in optimizing resource usage, improving productivity and increasing profitability for farmers and agro-enterprises. The University has also been developing high-yielding varieties of major crops, such as rice, maize, green gram and red gram. Further, PJTSAU has initiated the establishment of the Center of Innovation and Agri-entrepreneurship with an objective to create and catalyze a dynamic agri-innovation system for the larger benefit of the sector. Keeping the agricultural

Figure 4.6a, 4.6b, 4.6c

Fertilizer consumption in Telangana

Telangana has the highest fertilizer consumption in the country but this is decreasing

Figure 4.6a: State-wise consumption of fertiliser

State-wise consumption of fertiliser (N+P+K) in 2018-19 (kg/acre)

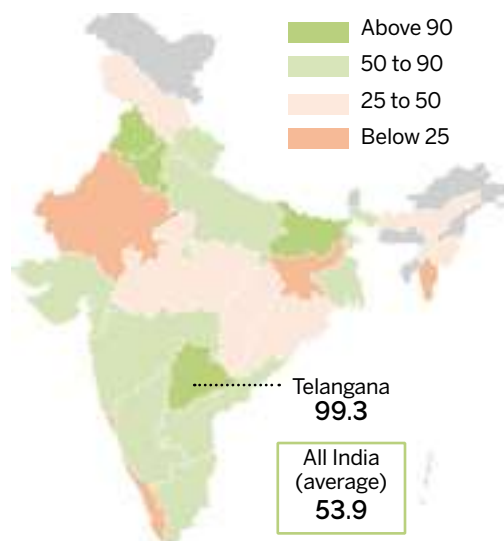
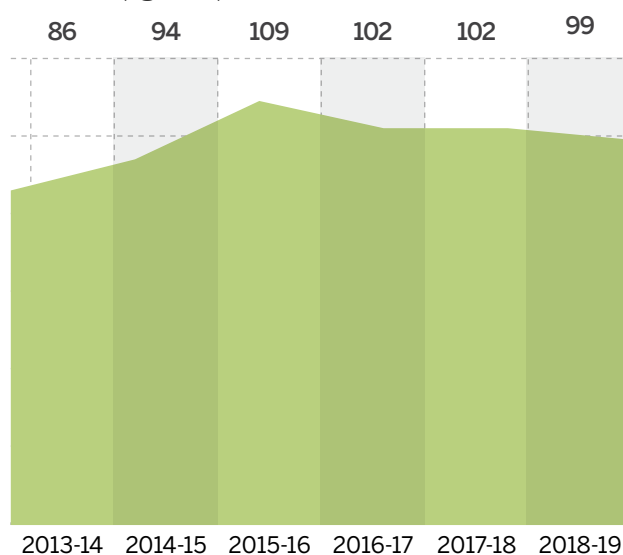


Figure 4.6b: Consumption of fertiliser in Telangana

Consumption of fertiliser (N+P+K) in 2018-19 (kg/acre)

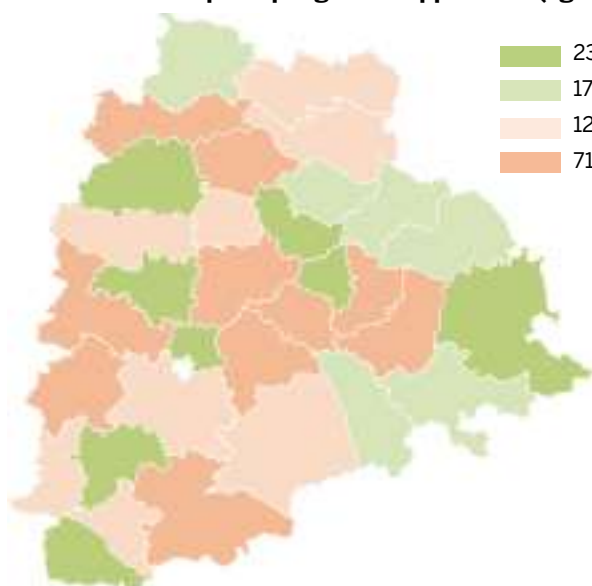


N+P+K: Nitrogen, Phosphorus, and Potassium.

Source: Agricultural Statistics at a Glance Report 2019, Ministry of Agriculture and Farmers Welfare, Government of India

Figure 4.6c: District-wise fertilizer consumption in the state

Fertilizer consumption per gross cropped area (kg/acre)



State average: 177

Warangal Urban	617	Wanaparthy	156
Medchal-Malkajgiri	532	Rangareddy	153
Karimnagar	373	Nalgonda	152
Medak	358	Kamareddy	145
Mahabubnagar	317	Rajanna	138
Bhadradi	296	Kumuram Bheem	124
Nizamabad	263	Jangaon	123
Jogulamba	249	Warangal Rural	117
Khammam	218	Mahabubabad	113
Jayashankar	212	Jagitial	110
Adilabad	207	Yadadri	104
Peddapalli	199	Vikarabad	103
Suryapet	184	Nagarkurnool	88
Mulugu	183	Siddipet	88
Narayanpet	176	Sangareddy	80
Mancherial	158	Nirmal	71

Note: Fertilizer consumption in the above map includes all fertilizers.

Source: Department of Agriculture

needs of the state in view, PJTSAU constantly strives to establish new colleges to cater to the agriculture staffing requirement and new extension centres to strengthen farmer outreach.

4.3 Agriculture Outputs: Production and Yield

The Government's schemes and initiatives since the state's formation has helped boost several aspects of agriculture production.

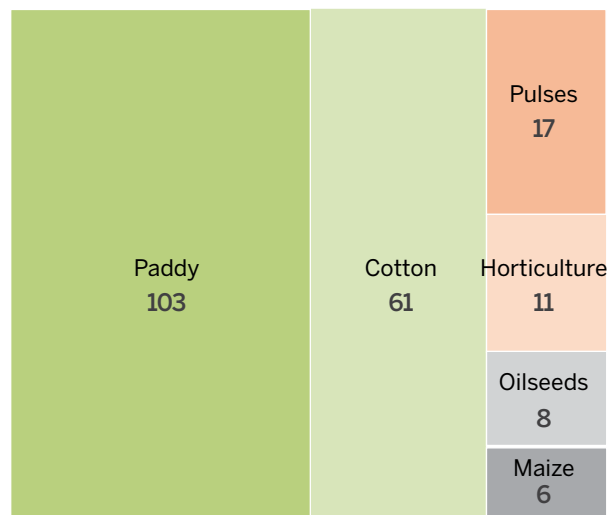
4.3.1 Crop Production

Paddy is the predominant crop in the state and accounted for 50.3% (103 lakh acres) of the total gross cropped area in the state in 2020-21 compared to 26.6% in 2014-15 (Figure 4.7). Paddy production increased from 193 lakh MTs in 2019-20 to 251 lakh MTs in 2020-21, an increase of 29.9%. This has helped make the state a national leader in paddy production. In 2020-21, the GVO of paddy was Rs. 43,255 crore, a 33% increase from 2019-20 (Rs. 32,373 crore). Peddapalli, Suryapet, Karimnagar, Jagitial, Mulugu

Figure 4.7

Area under production of various crops in Telangana in 2020-21

Area sown under crop in 2020-21 (in lakh acres)*

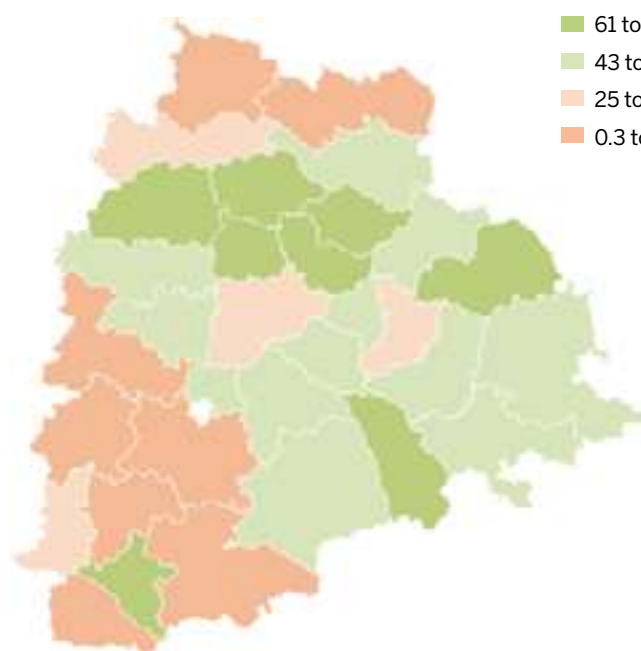


*As per 2nd Advance Estimates
Source: Directorate of Economics and Statistics

Figure 4.8

Share of paddy in gross cropped area for each district in 2019-20

Share of paddy in gross cropped area (%)



- 61 to 79
- 43 to 61
- 25 to 43
- 0.3 to 25

State average: 45

Peddapalli	79.1	Warangal Urban	47.2
Suryapet	74.0	Mahabubabad	46.0
Karimnagar	70.6	Khammam	45.4
Jagitial	69.6	Jangaon	45.0
Mulugu	68.4	Siddipet	39.7
Nizamabad	67.9	Warangal Rural	33.0
Rajanna	62.5	Narayanpet	29.2
Wanaparthy	61.7	Nirmal	28.9
Yadadri	59.3	Jogulamba	23.3
Medak	58.6	Mahabubnagar	19.8
Mancherial	55.2	Nagarkurnool	19.3
Medchal-Malkajgiri	54.7	Kumuram Bheem	16.3
Bhadradi	49.7	Rangareddy	13.7
Jayashankar	49.6	Vikarabad	11.6
Kamareddy	49.1	Sangareddy	10.4
Nalgonda	48.6	Adilabad	0.3

Source: Directorate of Economics and Statistics

Figure 4.9

Major crop production in Telangana in 2020-21

Figure 4.9a: Paddy production (in lakh tonnes)

Paddy production

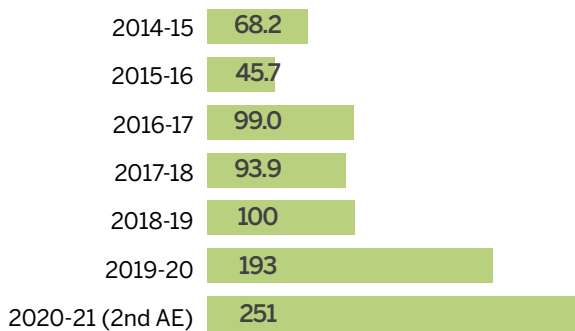


Figure 4.9b: Cotton (Kapas) production (in lakh tonnes)

Cotton production

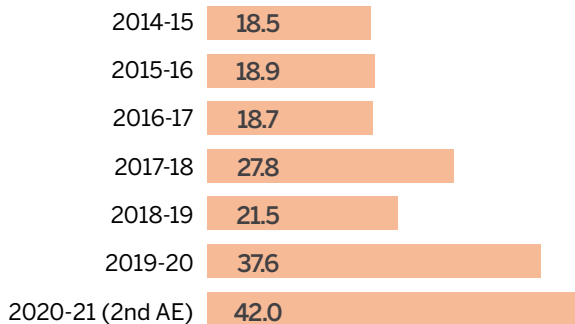
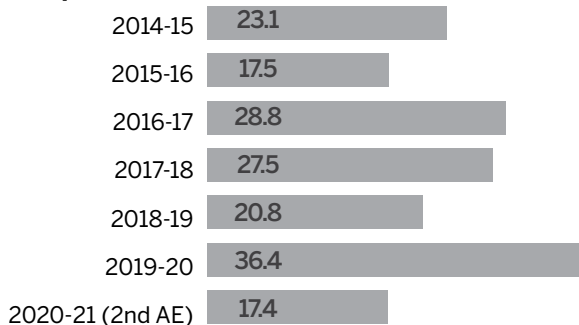


Figure 4.9c: Maize production (in lakh tonnes)

Maize production

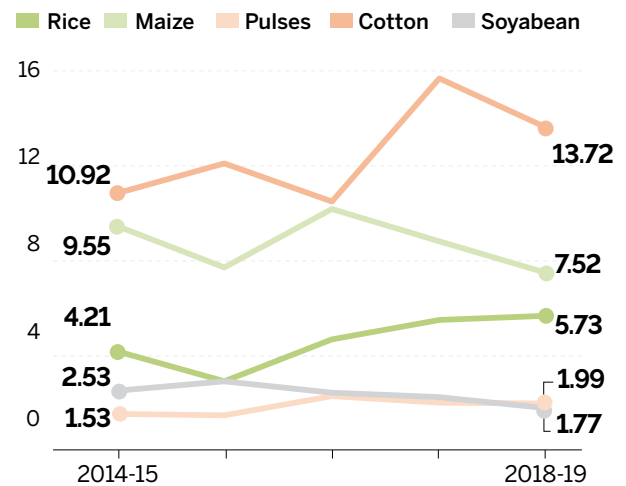


Source: Directorate of Economics & Statistics

Figure 4.10

Major crop production in Telangana in 2019

Crop production in Telangana (as a % of India's total crop production)



Source: Directorate of Economics and Statistics, Government of India

and Nizamabad are the top paddy-producing districts, where paddy accounted for more than 60% of the district's gross crop sown area (Figure 4.8).

Cotton production has increased (accounting for 29.4% of area sown in 2020-21). Consequently, Telangana has emerged as the second largest cotton producing state in the country. The GVO from cotton in 2020-21 has increased by 12.7% (Rs. 14,500 crore as per 2nd advances estimates) from the year 2019-20 (Rs. 12,980 crore). Within the state, Nalgonda, Nagarkurnool and Adilabad have the greatest area under cotton production. Bengal gram production has also increased by 27.5% from 1.9 lakh MTs in 2019-20 to 2.5 lakh MTs in 2020-21, while redgram production increased by 57% from 2.7 lakh MTs in 2019-20 to 4.1 lakh MTs 2020-21 (as per 2nd advance estimates).

4.3.1.1 Crop Diversification

Sustainable agricultural growth in the state requires crop diversification. This will make farmer incomes

3 Gibbs and Martin's Method for Demarcating Crop Diversification has been used to compute the Index of Crop Diversification. This is the same method used in the Government of India's 2017-18 Economic Survey. The Index of Crop Diversification = $1 - [\sum x^2 / (\sum x)^2]$, where X is the percentage of total cropped area under an individual crop.

more resilient to fluctuating prices and help them realize higher farm incomes. Over the years, the Government has encouraged the farmers to diversify crops based on the demands of the market and realize higher incomes. For instance, maize produce is in surplus globally, nationally and at the state level too. Therefore, the Government discouraged farmers from cultivating maize, and promoted cotton and redgram cultivation. As a result, maize acreage has dropped from 9.7 lakh acres in 2019-20 Vaanakalam to 2.3 lakh acres in 2020-21, a 75.9% reduction. During the same period, cotton acreage increased from 52.6 to 60.5 lakh acres, an increase of 15.2% while redgram acreage grew by 48.9% (from 7.3 to 10.9 lakh acres).

Crop diversification is dependent on various factors such as agro-climatic conditions, farm size and cropping knowledge. In 2019-20, there was

significantly greater crop diversification (as measured by a crop diversification index³) in Mahabubnagar, Nirmal and Wanaparthy (the three most diversified districts), compared to Jagtial, Kumuram Bheem and Nizamabad (the three least diversified) (Figure 4.11).

4.3.2 Horticulture

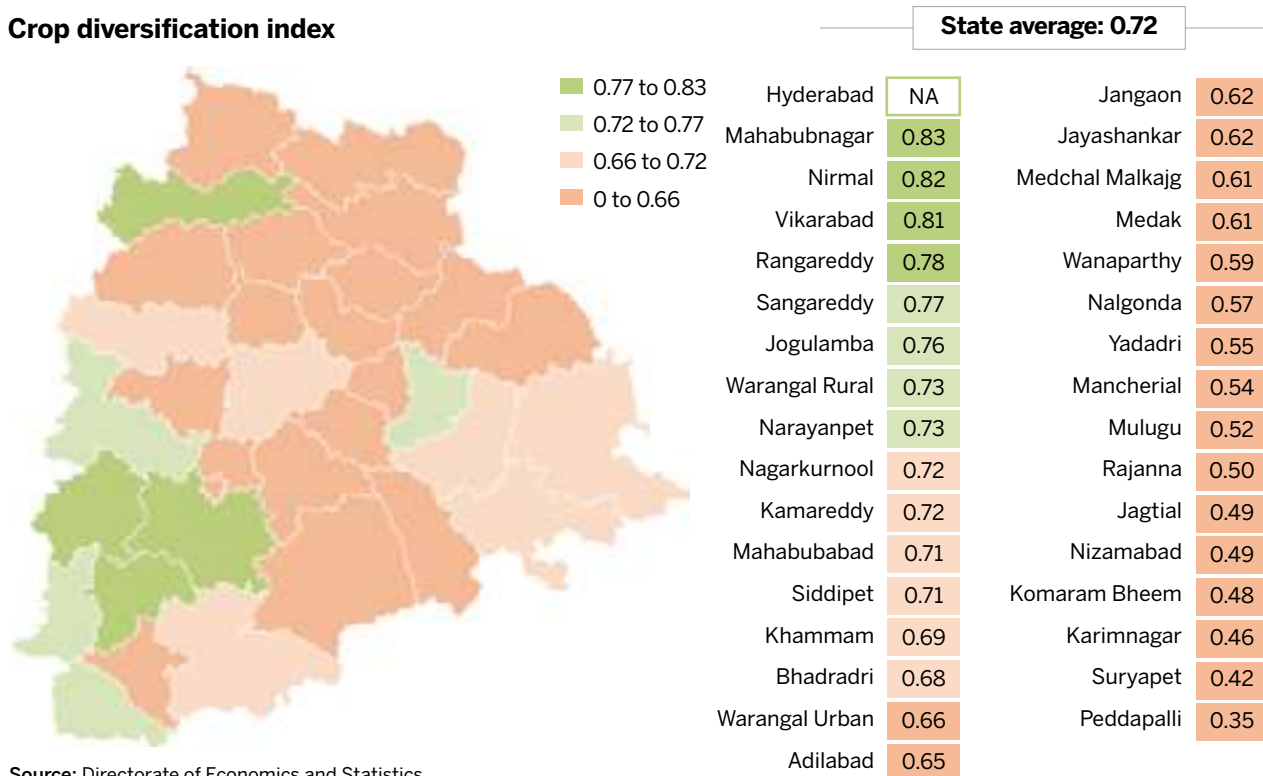
Along with crop production, horticulture production is also increasing in the state. The Government has promoted horticulture cultivation through establishing polyhouses, vegetable crop colonies and dissemination of new cultivation methods. Horticulture production has also been driven by better irrigation delivered through micro-irrigation projects (see section above). The contribution of the horticulture sector to the overall agriculture GVA of the state has increased from 26.6% in 2018-19 to 29.9% in 2019-20.

Figure 4.11

District-wise crop diversification index for Telangana in 2019-20 (Crop diversification index)

Index value ranges between 0 and 1 and higher the value, greater crop diversification.

Crop diversification index

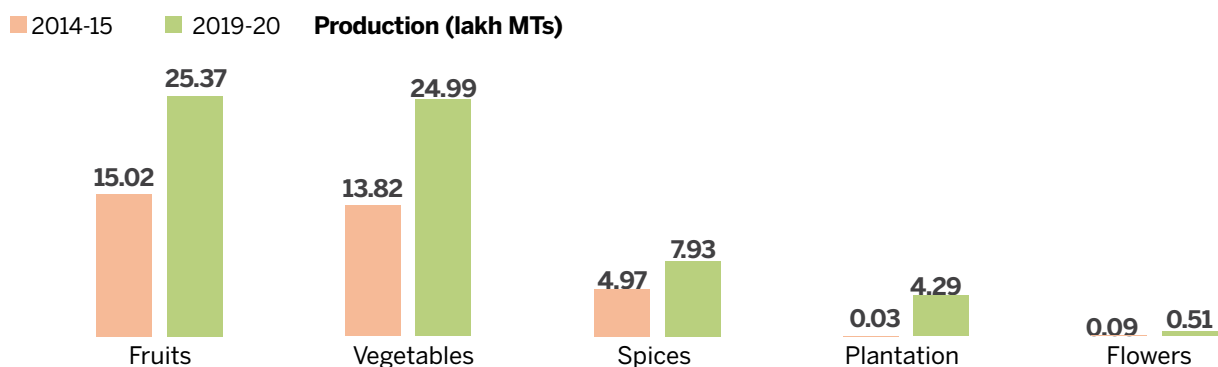


Source: Directorate of Economics and Statistics

Figure 4.12

Production of major horticulture crops in Telangana from 2014-15 to 2019-20 (lakh MTs)

Production of fruits, vegetables, spices and plantation crops have all increased significantly



Source: Telangana Agriculture Action Plan 2020, Department of Agriculture

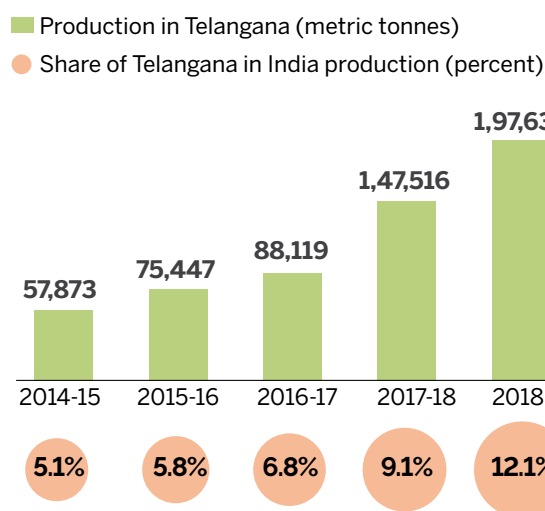
Since 2014, horticulture cultivation (fruits, vegetables and flowers) has increased by 20% and currently, it accounts for 6.2% of the total cultivated area in the state. In 2019-20, total horticulture production was 63.1 MTs, an increase of 86% from 2014-15. The growth in horticulture production has been broad-based, with significant increase in the production of fruit, vegetable, spice and plantation (Figure 4.12). The state is the national leader (in terms of production and area under cultivation) for turmeric and ranked second in chillies. In oil palm, the state ranks 6th in terms of area under cultivation and 2nd in production. The state also ranks 7th in terms of area and 6th in production of mango. In overall vegetable production, the state stands at 16th in terms of area under cultivation and 15th in overall production.

4.3.2.1 Oil Palm Production

The Government has made concerted efforts to increase oil palm production as part of its effort to boost farmer incomes. Increasing palm oil production, the by-product of oil palm, is a national priority, with the Government of India seeking to achieve self-sufficiency in oil palm production under the National Food Security Mission - Oil Palm. Aligning itself with this mission, the Government of Telangana has been promoting large scale expansion of oil palm production. As a result, oil

Figure 4.13

Oil palm production in Telangana over time



Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India

palm production has increased significantly in recent years (Figure 4.13). Consequently, farmers in the state are realizing higher incomes from oil palm production. Several successful farmers reported incomes more than Rs. 7 lakh (per acre) in a year. The state ranks 6th in terms of area under cultivation, 2nd in production of oil palm, and 1st in oil extraction, amounting to 18.7% of the country's extraction. Given the state's success,

the Government of India has notified more areas in 25 districts of the state for oil palm cultivation (in addition to already identified districts).

4.3.3 Livestock

The state is rich in livestock resources and livestock production, which is emerging as an increasingly important source to further augment incomes of farmers and rural households. According to the national Livestock Census 2019, the total livestock population in the state is 3.3 crore, an increase of 22% from 2012. The state ranks 8th in total livestock population but 1st in sheep population and 3rd in poultry population.

Livestock output has increased significantly over the last five years and the state is a national leader in egg and meat production (Figure 4.14). In 2020-21, the production of eggs in the state was 1,481 crore—high means every 8th egg produced in the country comes from Telangana. Similarly, the state ranks 5th in meat production. Taken together, the livestock sector supports about 25.8 lakh families in the state and accounts for 9.1% of the state's GSDP (2020-21 advance estimates), which is a larger share than the crop sector.

4.3.3.1 Policies to Improve Livestock Production

Boosting Animal Health

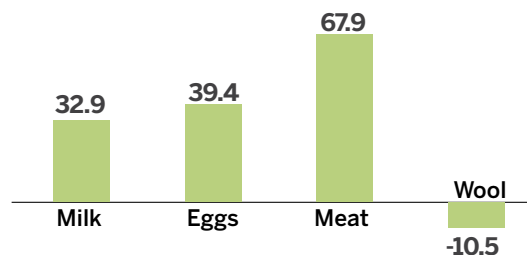
The growth in the livestock sector reflects the Government's concerted efforts to increase the availability of animal-origin foods like milk, meat and eggs for human consumption. One major component of this effort has been to improve animal healthcare which is a critical input for livestock production. Across the state, the Government has established animal polyclinics in district headquarters, and each mandal has been staffed with veterinary graduates. The animal health infrastructure in the state also includes a Super Specialty Veterinary Hospital (1), District Veterinary Hospitals (8), Area Veterinary Hospitals (98), Primary Veterinary Centres (909), Sub Centres (Animal Health) (1,101) and Mobile Veterinary Clinics (99).

Figure 4.14

Growth in livestock production in Telangana

Over the last five years, there has been a significant increase in meat, egg and milk production

Growth rate (%)



Source: Animal Husbandry Department

Beyond strengthening animal health infrastructure, the Government has also implemented specific initiatives to improve livestock health. Aligning with the National Animal Disease Control Programme for Foot and Mouth Disease, the Government has carried out mass vaccinations for cattle and buffalo. The Government has also launched a mass sheep and goat deworming programme. Mass Free Sheep and Goat Deworming is taken up thrice a year to reduce worm burden and to increase the production status in sheep and goats depending upon the area and situation. In 2020-21, 1,345 teams were deployed across the state to deworm 1.9 crore sheep (95% of the state's sheep and goat population), which will benefit 1.8 lakh families.

Fodder Production

Another important input for better livestock production is fodder for animals. The Animal Husbandry Department has been working towards fodder production and development by supplying fodder seeds under various schemes to the farmers for cultivation. In 2019-20, the Government supplied 2,255 MTs of fodder seeds, with financial assistance of Rs. 6.1 crore to cultivate fodder in approximately 1.1 lakh acres of land. As part of the National Livestock Mission, the Government is also developing Gochar lands to generate additional pasture lands in selected villages.

Sheep Rearing Development Programme (SRDP)

The Government is implementing the Sheep Rearing Programme to support sheep rearing and meat production. The Government has spent Rs. 5,000 crore on the programme, benefitting 4 lakh beneficiaries. So far, 76.9 lakh sheep have been distributed to 3.66 lakh beneficiaries. The 70.9 lakh lambs borne to these sheep are worth Rs. 3,544 crore. Accordingly, meat production has increased from 4.46 lakh MTs to 8.5 lakh MTs, thus increasing the per capita meat availability per annum in the state from 13 kgs to 16.5 kgs.

4.3.4 Fisheries

Across India, inland fisheries, where farmers build ponds on their landholdings to breed fish, is emerging as an important source of additional income for farmers. One of the consequences of the Government's investment in irrigation, particularly the rejuvenation of tanks under Mission Kakatiya, is the increased water availability for the state's inland fishery sector. Currently, Telangana ranks 3rd in inland fisheries resources and the fisheries sector is one of the fastest growing sectors in the state, in terms of employment and income generation. Between 2016-17 and 2019-20, the total market value of the fish and prawn production increased from Rs. 2,000 crore to Rs. 4,670 crore, and it is expected to increase to Rs. 5,400 crore during 2020-21. Around 27 lakh people are engaged in fisheries and they are organized into 4,452 fishermen societies.

To increase fish production and productivity, the Government is creating backward and forward linkages to relevant markets, ensuring self-sufficiency in fish seed production, improving the livelihood conditions of fishermen, and ensuring the availability of hygienic fish to consumers at affordable prices. Specifically, the Government is implementing the Integrated Fisheries Development Scheme. Under this scheme, the Government is providing facilities for infrastructure development, harvesting and marketing support, such as nets, mopeds and ice-boxes to fishermen; creation of water sources for enhancement of fish

seed; and subsidies for fish production. In addition, the Government is implementing a novel scheme, where 150 mobile fish retail outlets have been provided to unemployed women in 150 wards in Hyderabad at a cost of Rs. 15 crore.

4.4 Access to Markets

4.4.1 Market Infrastructure

Regardless of the crop they produce, farmers' incomes depend on the ability to sell their products and the price they realize. The Government is committed to helping farmers access markets and ensuring remunerative prices for all agricultural products. According to data presented in the Dalwai Committee report, Telangana has the potential to improve its market infrastructure and increase its market coverage in order to be at par with other states in India. In 2015, there were 260 wholesale market yards in the state. After adjusting for gross cropped area per AMC market, Telangana's market coverage was lower than the other states. However, when adjusted for the number of farmers per market, Telangana's market density was higher than that of other states (Figure 4.15).

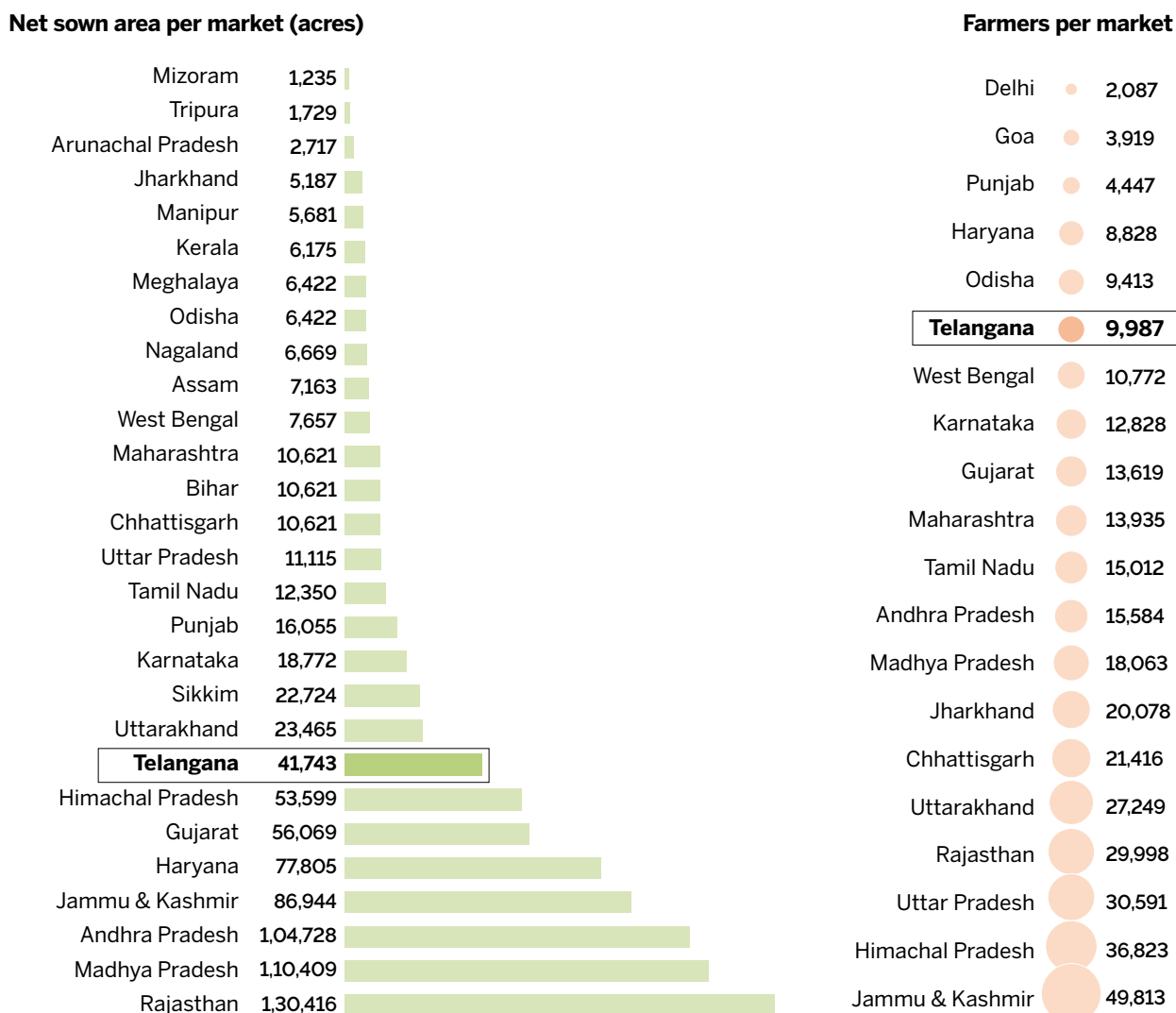
To increase market coverage and build markets, the Government is investing in improving market infrastructure. There are currently 192 Agricultural Produce Market Committees (AMCs) functioning in the state. The districts with the most number of AMCs are Siddipet (14), Jagtial (13), Nalgonda (10) and Kamareddy (10). However, after adjusting for the number of farmers per market, the AMCs in Medchal-Malkajgiri, Bhadradi and Peddapalli serve the fewest farmers.

To strengthen the functioning of these markets, the Government has implemented several reforms under the Telangana Markets Act, 2016. This has included the implementation of eNAM in 57 AMCs out of 192 AMCs in the state. In 2017, the AMC of Nizamabad was awarded the Prime Minister's Excellence Award for successful implementation of eNAM. The state was also the first in the country to implement weight integration and payments under eNAM.

Figure 4.15

AMC market density in Telangana

Telangana's market density in terms of agricultural land per market was lower than most states in 2015 but higher in terms of farmers per market



Source: Doubling Farmers' Income - Volume 4, Ashok Dalwai Committee

To promote better market access, the Government has established special commodity markets for sweet lime in Nalgonda district at Gandhamvarigudem, for lime at Nakrekal and for donda at Konamekalavarigudem.

4.4.2 Sales and Procurement

For most major crops, AMCs are the most important markets for farmers. For instance, 35 lakh MTs of paddy arrived in AMCs across the state during 2019-20—this accounted for 20% of the total production in the state.

The Government, along with the Government of India, tries to ensure that they facilitate easy procurement of major crops from the farmers in time.

Under the decentralized procurement system of the Government of India, the state has steadily increased procurement of major crops. The state procured 48.7 lakh MTs of paddy in 2020-21 (upto March 2021) and 111 lakh MTs of paddy during 2019-20. The Civil Supplies Department has also supported paddy procurement

through women Self Help Groups (SHGs) in all paddy growing districts. To facilitate easier procurement, the Government has also established procurement centres near paddy production areas to help farmers sell their produce at village level. During the Vaanakalam season in 2020-21, 300 cotton procurement centres were opened in the state and 18 lakh MTs of cotton were purchased, amounting to Rs. 10,167 crore.

4.4.3 Farmer Producer Organizations

An important way to boost farmer incomes is through increasing their bargaining power so that they can realize better prices. Pilot studies conducted by the Small Farmers Agribusiness Consortium (SFAC) and NABARD on a national level indicate that the problems encountered by small and marginal farmers can be mitigated to a large extent by organizing them into FPOs⁴. FPOs help farmers achieve economies of scale in purchasing inputs, and processing and marketing of their produce. FPOs can also provide member-farmers access to timely and adequate credit and provide linkages to markets.

The Society for Elimination of Rural Poverty (SERP) is also promoting the Farmer Producer Groups with women SHGs. As of December 2020, there are 501 FPOs across the state formed by SFAC, NABARD, SERP, other government departments and NGOs with 82,858 small and marginal farmers.

The Government has also established supporting institutions for FPOs. These include NABARD's partnership with Producer Organization Promoting Institutions (POPIs) and resource support agencies.

4.4.4 Rythu Vedikas

In order to promote collective efficiency among farmers, the Government has proposed to set up 2,601 Rythu Vedikas in all the Agriculture Extension Officer's clusters, which essentially function as FPOs and are a first-of-its-kind initiative in India. Specifically, Rythu Vedikas, with support from Agriculture

Extension Officers, help farmers mobilize into groups, disseminate information on agriculture practices, assist with regulated farming, increase access to marketing facilities, and inform farmers about the welfare schemes they are eligible for.

The Government has earmarked Rs. 350 crore towards the development of Rythu Vedikas in 2020-21 under the Normal State Plan (NSP). So far, 1,546 Rythu Vedikas have been constructed. Field reports suggest that Rythu Vedikas are serving as a platform to motivate and enable farmers to generate higher returns.

4.4.5 Food Processing

An important way to increase farmer incomes is to link farmers to food value chains. To do this, the Government is working with the Government of India to implement the Prime Minister Formalisation of Micro Food Processing Enterprises Scheme. The scheme seeks to formalize existing micro food processing enterprises in the state so that these enterprises can grow and strengthen agriculture value chains. District teams have identified 23,509 existing food processing units and 7,633 units have been shortlisted for upgradation. Among these, more than 40% of units are flour mills and 29% are chilli and turmeric processing units.

The state is also keen on establishing Special Economic Zones (SEZ) for food processing units, which includes rice mills, dal mills, oil mills and other units. These special food processing zones will create the necessary storage, warehousing, logistics and export-oriented infrastructure.

4.4.6 Storage Infrastructure

Accessible storage can be an important resource for farmers, since it allows farmers to mitigate the risks of price changes. There are currently 846 godowns in the state, with a total capacity of 60.1 lakh MTs (Table 4.2). Within this, the Telangana State Warehousing Corporation operates 97 godowns with a total capacity of 26.5 lakh MTs with 99% occupancy. The Corporation also stood first in the country in

4 NABARD, 2021. Farmer Producers' Organizations (FPOs): Status, Issues & Suggested Policy Reforms. [online] NABARD. Available at: <https://bit.ly/3bDy3Kh> [Accessed 17 February 2021]

Table 4.2**Details of existing godowns in Telangana**

	No. of godowns	Capacity in LMTs
Investor Godowns	65	21.86
Agricultural Marketing Committee (AMC) (including NABARD Godowns)	523	21.86
Food Corporation of India (FCI)	11	5.37
Central Warehousing Corporation (CWC)	17	4.79
Telangana State Warehousing Corporation (SWC)	27	2.86
PEG Godowns	5	1.78
Markfed	55	0.84
Civil Supplies Corporation	143	0.76
Total	846	60.12

Source: Department of Agriculture

occupancy for consecutive 3 years and is planning to significantly increase capacity.

4.4.7 Agricultural Exports

Linking agriculture production to the export market is a critical step in increasing incomes for farmers and the Government has been working towards strengthening these linkages. Among the exports from the agriculture and allied sectors in the state, cereals, spices, meat and cotton make up the top commodities (Figure 4.16). The state also exports seeds to 18 countries in the world.

Table 4.3**Year-wise status claim under Rythu Bima**

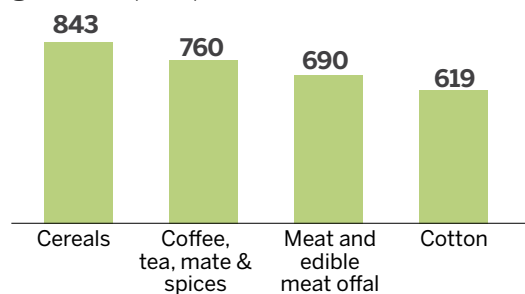
	2018-19	2019-20	2020-21 *	Total
Farmers enrolled (in lakh)	31.27	30.81	32.73	
No. of claims settled	17,979	18,918	11,158	48,055
Amount given (in Rs. crore)	899	946	558	2,403

*Note: The insurance period is from 14 August 2020 to 13 August 2021

Source: Department of Agriculture, Telangana

Figure 4.16**Top agriculture and allied sector commodities exported from Telangana**

Exports in 2019-20 (in Rs. crore)
Agriculture (total): Rs. 2,912 crore



Source: Commerce & Export Promotion Wing, Commissionerate of Industries, Industries & Commerce Department

4.4.8 Risk Mitigation through Rythu Bima

Many farmers in the state are the sole earners in their families which leaves households vulnerable to the sudden death of farmers. The Government introduced the Rythu Bima Scheme in 2018 to mitigate the impact of such a tragedy, by providing financial relief of Rs. 5 lakh and social security to the family members and dependents of farmers, in case of the sudden loss of a farmer's life. The claims under the scheme are settled within 10 days. Under the scheme, the entire premium on behalf of the enrolled farmer is paid by the government to the insurance agency.

Since the launch of the scheme, 48,055 claims have been settled and Rs. 2,403 crore transferred

to the nominees (Table 4.3). This scheme has had a tremendous impact on the lives of the bereaved families and their livelihoods—especially for families of small and marginal farmers. More than 90% farmers (29,76,203 farmers) enrolled and benefited under the scheme belong to the small and marginal categories and there are no large farmers enrolled under the scheme (Figure 4.17).

4.5 Access to Finance

4.5.1 Credit Disbursement

Credit can be vital for farmers to finance agriculture operations. The Government has taken several steps to increase credit availability to farmers since the formation of the state. While agriculture credit can be secured from various sources, the Government has emphasized increasing formal credit through banks and cooperatives. The Telangana State Cooperative Apex Bank Limited (TSCAB), with its 42 branches, plays a key role in channeling funds from NABARD to farmers through 9 District Central Cooperative Banks (DCCB) and 818 Primary Agriculture Credit Societies (PACS), by ensuring timely and adequate credit facilities to agriculture and allied activities. As a result, there has been a 10% increase in the credit allocated for the crop sector between 2018-19 to 2019-20.

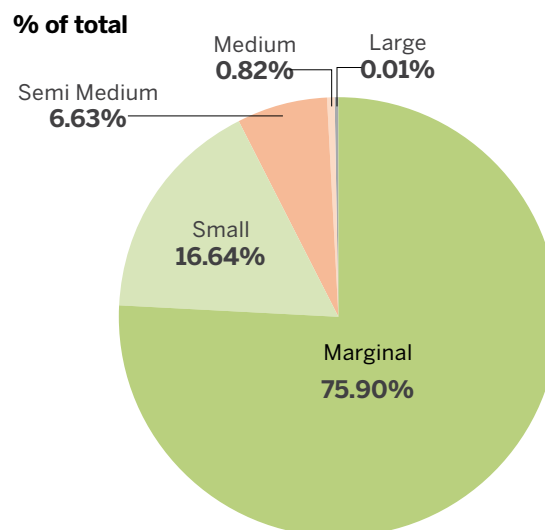
As per the Annual Credit Plan prepared by the State Level Bankers Committee of Telangana, the total annual credit plan for agricultural sectors during the year 2020-21 is Rs. 75,142 crore. Out of the total target, Rs. 53,223 crore was allocated for the crop loans, and Rs. 21,919 crore towards agriculture term loans and agriculture and allied activities. Out of the total target, Rs. 38,812 crore was disbursed towards the agriculture sector till December 2020, and further lending is under process.

Given these initiatives, between 2014 and 2019, the state has had one of the highest levels of credit disbursement in the country for the agriculture and allied sectors, after adjusting for agriculture output.

Figure 4.17

Distribution of farmers enrolled under Rythu Bima Scheme according to landholding size

More than 90% of beneficiaries enrolled under the Rythu Bima Scheme are small and marginal farmers



Source: Agriculture Department, Telangana

4.6 Way Forward

Agriculture is pivotal for the state's development and in realizing 'Bangaru Telangana'. Recognizing this, the Government has invested heavily in the agriculture sector through flagship schemes such as Rythu Bandhu, Mission Kakatiya and Rythu Bima. Supported by these schemes, the sector has grown in recent years, driven by more diversified crop production and increased livestock production; and it played a crucial role in mitigating the impact of COVID-19. Going forward, the Government will build on this success and continue to focus on increasing farmer incomes and improving farmer welfare. In particular, to address the challenges of climate change, the Government will invest in climate resilient agriculture to ensure sustainable agriculture growth.

CHAPTER 5

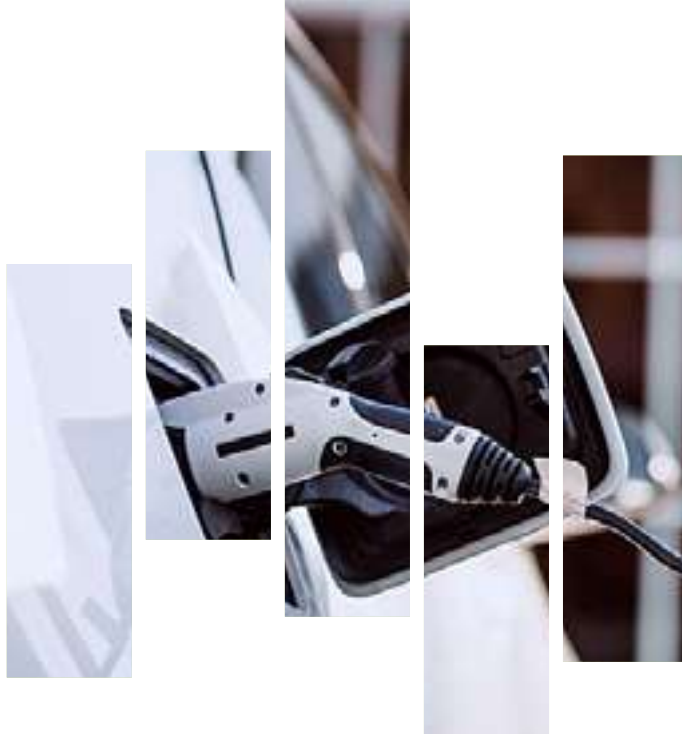
INDUSTRIES



Key Highlights

Manufacturing is an important lever of growth and employment for India's growing working-age population. The Government of Telangana recognizes this, and is pursuing industrialization as a key strategy to promote economic growth and development. At the same time, in line with the state's mission to create prosperity for all, the Government has taken several steps to promote equitable growth. Key highlights of these steps include:

- Successfully creating an investor-friendly environment while balancing interests of workers and all stakeholders, the state has consistently been ranked amongst the top 3 in Ease of Doing Business Index since 2016.
- In response to COVID-19, the Building and Other Construction Workers Welfare Board distributed Rs. 1,005 crore to 8.3 lakh construction workers. The Government, in coordination with line departments and railways, repatriated more than 2 lakh migrant workers to their home states.
- Initiatives such as TS-iPASS have created a favourable investment climate in the state. Since the formation of the state, 13,379 MSMEs have registered under TS-iPASS with an investment of Rs. 18,465 crore and creation of 2,43,556 jobs; 889 large firms have registered through TS-iPASS over the same period, with an investment of Rs. 1,88,881 crore and generation of 12,14,462 jobs. There is also rapid growth in emerging sectors such as electronics, which has attracted Rs. 7,500 crore worth of investment in the last two years.
- A good indicator of how well the industrial policy is working on the ground is repeat investments, and it is noteworthy that 24% of the state's investments are repeat commitments from satisfied investors.
- The state has one of the largest industrial land banks and is creating industrial parks based on industrial competitiveness of the locality. While offering infrastructure to industries, Government offers connectivity to the industrial sites and provides land at below market prices to improve competitiveness.
- The Government has catalyzed the creation of a diverse industrial base in the state. Major sectors in terms of contribution to Gross Value Added (GVA) include pharmaceuticals and chemical products, textiles and cotton ginning, non-metallic minerals, machinery and equipment, and food products.
- In terms of infrastructure, the state has embarked on a mission to develop world-class industrial estates such as Hyderabad Pharma City and Kakatiya Mega Textile Park, while ensuring the smooth provision of uninterrupted power supply to all factories.
- Hyderabad and its surrounding districts comprise one of India's biggest pharmaceutical manufacturing hubs. Importantly, the first indigenously developed vaccine for COVID-19, Covaxin, comes from Bharat Biotech, a Hyderabad-based company.
- Biotech companies in and around Hyderabad contribute to 1/3rd of the world's vaccine production.



5.1 Role of Industry and Recent Trends

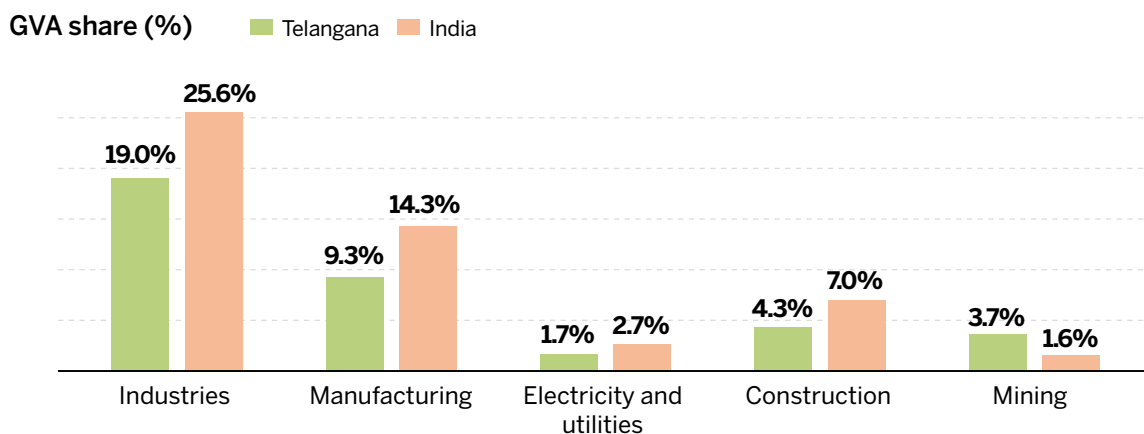
The industrial sector contributes 19% to the state's Gross State Value Added (GSVA). The manufacturing sector contributes 9.3% to the state's GSVA — accounting for about half of the industrial sector GSVA. The state has made considerable progress in improving its Ease of Doing Business ranking, moving up from rank 13 in

2015 to consistently maintaining a position in the top 3 ranked states thereafter.

The growth of the industrial sector in the state has generally outpaced the growth of the sector at the all-India level (see Figure 5.2). The state has witnessed steady growth across all sub-sectors, with mining and quarrying consistently contributing more to the industrial growth of the state in comparison to the sub-sector's all-India growth contribution.

Figure 5.1

Composition of industrial sector (GVA shares, 2020-21 advance estimates at current prices)

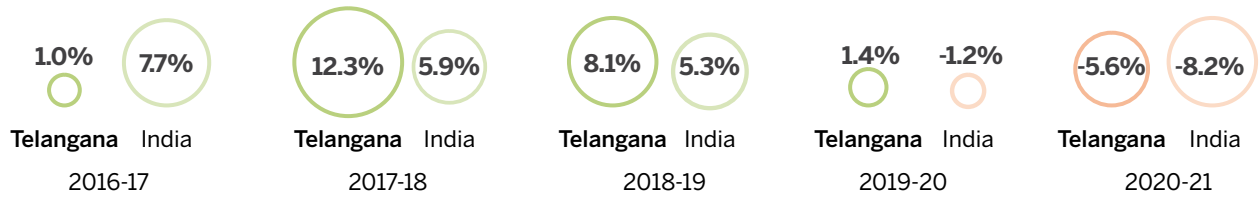


Source: Ministry of Statistics and Programme Implementation, GoI; Directorate of Economics and Statistics, Telangana

Figure 5.2

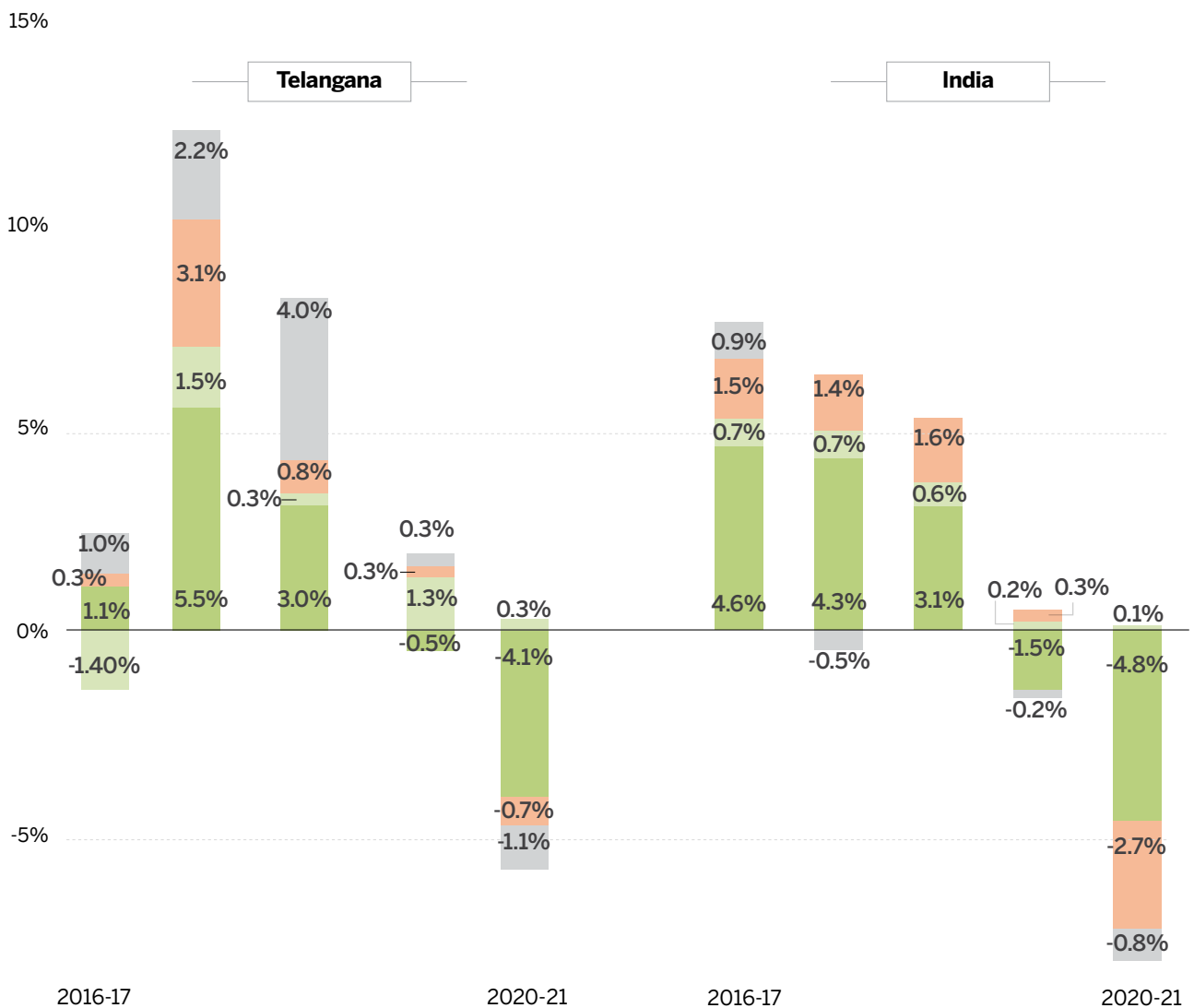
Contribution to industrial growth: Telangana vs India (2016-17 to 2020-21 GVA at constant prices)

Industrial growth



Contribution to industrial growth

■ Manufacturing
 ■ Electricity and Utilities
 ■ Construction
 ■ Mining and Quarrying



Source: Ministry of Statistics and Programme Implementation, GoI; Directorate of Economics and Statistics, Telangana

5.1.1 COVID-19 Support

5.1.1.1 Initiatives by the Government

COVID-19 created an unprecedented crisis that affected migrants and construction workers significantly. In response, the state mobilized its entire Government apparatus to ensure minimal disruption to strategic industries as well as the well-being of vulnerable sections of society. Measures included the following:

- The Government took steps to ensure minimal disruption to industrial operations. For instance, when a shipment of Lockheed Martin was impacted, the Government coordinated with three state Governments and ensured smooth shipments, duly considering the geopolitical implications.
- During the lockdown, the Building and Other Construction Workers Welfare Board distributed Rs. 1,005 crore to 8.3 lakh construction workers. In coordination with the Civil Supplies Department, the Board provided two instalments of Rs 1,500 each per family through direct benefit transfer (DBT) and 12 kg of rice per person.
- The Government instructed all the Collectors of the districts, Commissioners of municipalities to provide the migrant workers with basic amenities such as food, water, shelter and medical assistance.
- A state-level help desk was established to address grievances related to payment of wages to workers during the lockdown.
- The Government, in coordination with line departments and railways, repatriated more than

2 lakh migrant workers to their home states. The railways arranged 151 special trains and repatriated around 2 lakh workers.

- The Directorate of Employment Training conducted webinars to guide job seekers on available opportunities, skill requirements and interview preparation.

5.1.1.2 AatmaNirbharBharat Abhiyan

The Government of India announced various schemes in 2020 to support Micro, Small and Medium Enterprises (MSMEs) in dealing with the COVID-19 shock. One of the important schemes was collateral-free loans for businesses. Under this scheme, all businesses (including MSMEs) are provided with collateral-free loans, totaling Rs. 3 lakh crore nationally. MSMEs were permitted to borrow up to 20% of their entire outstanding credit as of 29th February 2020, from banks and Non-Banking Financial Companies (NBFCs). Figure 5.3 shows progress under the scheme.

5.2 Major Initiatives to Promote Industry

5.2.1 TS-iPASS

An important factor behind the state's high Ease of Doing Business ranking has been the success of the Telangana State Industrial Project Approval and Self-Certification System (TS-iPASS) over the last six years. TS-iPASS is the Government's flagship certification service to establish industries in the state. The scheme has notified timelines for all industrial clearances,

Figure 5.3

Progress under Emergency Credit Line Guarantee Scheme (ECLGS)/ Guaranteed Emergency Credit Line (GECL) of AatmaNirbharBharat Abhiyan

	No. of accounts	Amount (in Rs. crore)
Eligible accounts	1,89,780	5,784
Sanctions	1,38,707	5,226
Disbursal	1,18,208	4,731

Source: Commissionerate of Industries, Telangana

Figure 5.4**Sector wise TS-iPASS number of units, investment, and employment - 2015 to 2021****Units**

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Engineering	161	337	619	603	618	495
Food processing	240	241	372	468	450	570
Agro based including cold storages	160	117	250	314	420	456
Cement, cement & concrete products	84	119	226	260	278	415
Granite and stone crushing	83	162	261	204	224	206
Others	513	574	1,040	931	934	863
Total	1,241	1,550	2,768	2,780	2,924	3,005

Investment (in Rs. crore)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Thermal power plants	10,098	7,846	37,934	5,628	140	0
Real estate, industrial parks and IT buildings	133	4,818	4,432	22,472	5,122	19,922
Solar and other renewable energy	2,187	2,201	11,599	807	363	2,788
Pharmaceuticals and chemicals	2,304	2,297	1,644	2,203	2,125	2,197
Fertilizers	0	3,161	109	65	5,269	87
Others	7,331	5,848	10,935	8,572	9,038	5,673
Total	22,052	26,171	66,653	39,747	22,057	30,667

Employment

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Real estate, industrial parks and IT buildings	0	41,066	108,170	3,95,964	1,64,023	1,24,829
Textiles	824	1,378	2,543	188,972	3,262	4,848
Pharmaceuticals and chemicals	12,123	13,654	15,094	11,916	11,462	9,371
Food processing	7,710	10,941	8,293	14,074	8,465	7,936
Engineering	3,690	4,952	11,885	10,831	12,804	7,360
Others	37,622	36,267	61,604	41,608	38,050	24,427
Total	61,969	1,08,258	2,07,589	663,365	2,38,066	1,78,771

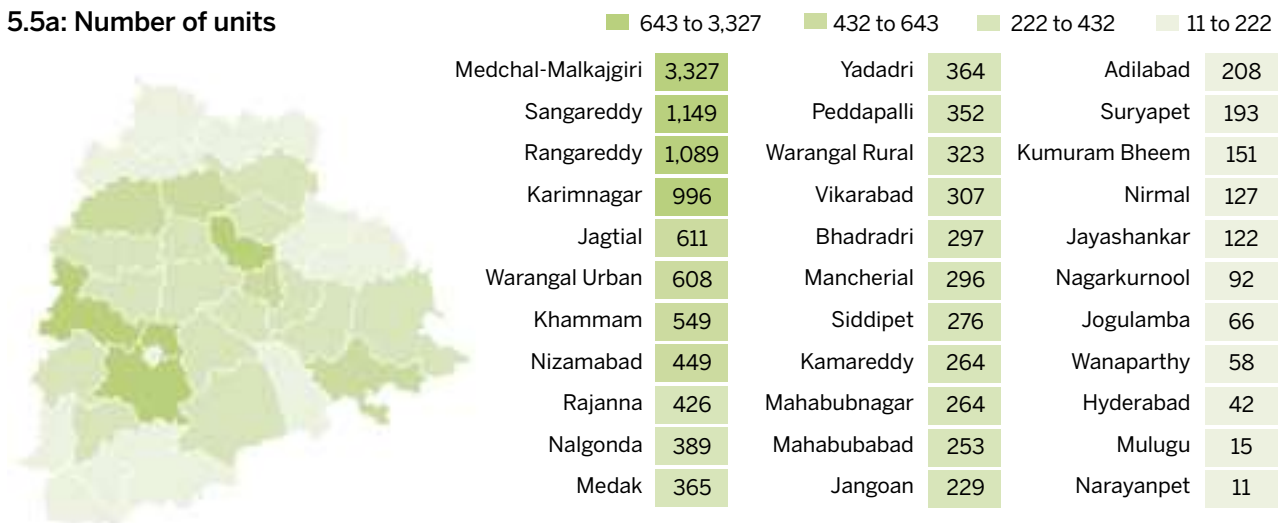
Source: TS-iPASS

Note: Each chart shows top sectors based on their cumulative share from 2015-16 to 2020-21. Data for 2020-21 upto December 2020

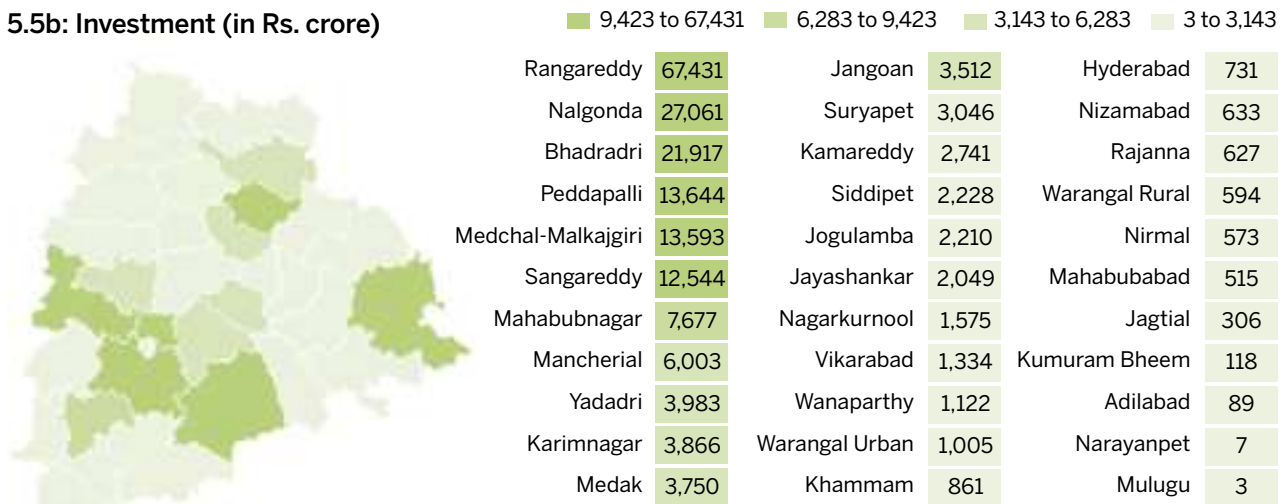
Figure 5.5

District wise total number of units, investments and employment from 2015 to 2021 as per TS-iPASS

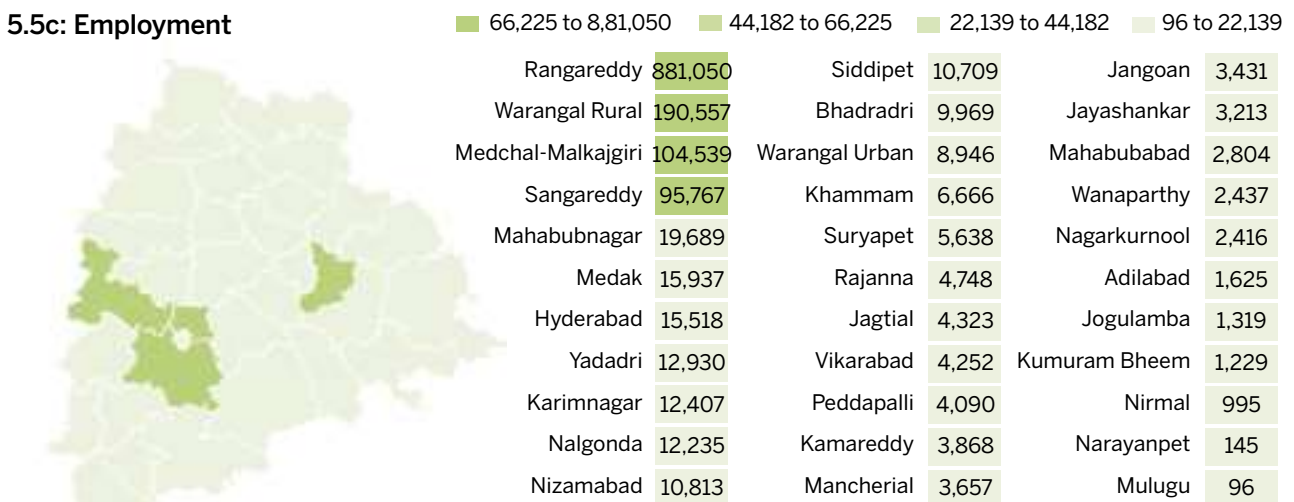
5.5a: Number of units



5.5b: Investment (in Rs. crore)



5.5c: Employment



Source: TS-iPASS

Table 5.1**Incentives sanctioned under T-IDEA 2014-2020**

	Industrial investment promotion		Power cost reimbursement		Interest reimbursement (pavala vaddi)	
	No. of claims sanctioned	Amount sanctioned (Rs. crore)	No. of claims sanctioned	Amount sanctioned (Rs. crore)	No. of claims sanctioned	Amount sanctioned (Rs. crore)
2014-15 to December 2020	4,079	1,262	7,216	661	6,690	469
2020-21 (up to December)	454	97	821	38	805	53

Source: Commissionerate of Industries

making Telangana the only state in the country with the 'right to clearance' for industrial projects.

Under TS-iPASS, 35 clearances from 27 departments are covered and a common application has been designed to cater to the requirements of all departments. It has streamlined the process of approvals by reducing the number of attachments from 110 to 10. The TS-iPASS portal provides for online pre-scrutiny of applications within 72 hours, which ensures that the applicant is informed of any shortfalls before making payment. An 'industry chasing cell' was created in the office of the Chief Minister, headed by a Principal Secretary, to monitor the implementation of major projects and inter-departmental coordination.

The state has seen a nearly three-fold increase in the number of units, and in employment in firms, using TS-iPASS since 2015. Investment committed by firms using TS-iPASS has also increased, by over 33%, during this same period. Between January 2020 and December 2020, 15 of the 33 districts saw an increase in investment commitments through TS-iPASS, while 18 districts saw an increase in employment commitments. Given the COVID-19 shock, the fact that more than half the districts in the state did not experience similar shortfalls is encouraging.

The five sectors that have seen the largest investment commitments since 2015 through TS-iPASS were, in order: thermal power (29.7%); real estate, industrial parks and IT buildings (27.4%); solar and other renewable energy (9.6%); pharmaceuticals and

chemicals (6.2%); and fertilizers (4.2%). The sectors that have registered the highest number of jobs since 2015 on TS-iPASS include: real estate, industrial parks and IT buildings (57.2%), textiles (13.8%), pharmaceuticals and chemicals (5%), food processing (3.9%), and engineering (3.5%). Year-wise trends for key sectors are shown in Figure 5.4.

The number of units registered, investment committed and employment generated through the industries processed under TS-iPASS varies substantially at the district level (see Figure 5.5). The top three districts in terms of number of units registered are Medchal-Malkajgiri (23.3%), Sangareddy (8%) and Rangareddy (7.6%). The distribution of investment is significantly more concentrated in districts such as Rangareddy (32.5%), Nalgonda (13%), and Bhadradri (10.6%). This pattern of concentration is even more pronounced while measuring employment, with Rangareddy alone accounting for 60.4% of the employment, followed by Warangal Rural (13%) and Medchal-Malkajgiri (7.1%).

5.2.2 T-IDEA and T-PRIDE

5.2.2.1 Telangana State Industrial Development and Entrepreneur Advancement (T-IDEA)

The Telangana State Industrial Development and Entrepreneur Advancement (T-IDEA) scheme, launched in 2014, seeks to encourage industrial entrepreneurship (Table 5.1 for different incentives sanctioned under T-IDEA in 2020).

5.2.2.2 Telangana State Program for Rapid Incubation of Dalit Entrepreneurs (T-PRIDE)

To encourage entrepreneurship among the Scheduled Castes (SCs) and Scheduled Tribes (STs), the Government launched a special incentive package scheme called Telangana State Program for Rapid Incubation of Dalit Entrepreneurs (T-PRIDE) in 2014. In 2020-21, around Rs. 109 crore was sanctioned to 2,352 ST entrepreneurs and Rs. 95.9 crore was sanctioned to 2,354 SC entrepreneurs (as on 2nd December, 2020). The year-wise total number of units and amount sanctioned for SC and ST entrepreneurs is presented in Table 5.2.

5.2.3 MSME Support

There has been a steady growth in the number of MSME registrations over the years, with 13,379 units commencing operations and registering on the TS-iPASS database since the formation of the state. Category wise details of MSME units established, capital invested, and employment generated is shown in Figure 5.6. Small units account for the highest share of MSME investment (64.3%) and the highest share

of MSME employment (54.2%). In order to support MSMEs, a variety of initiatives have been put in place, ranging from MSME priority sector lending to the Telangana Industrial Health Clinic which works on revival of sick units.

5.2.3.1 Priority Sector Credit to MSMEs (2020-21)

The State Level Bankers' Committee (SLBC) has planned a credit outlay of Rs 1.22 lakh crore on priority sector lending in 2020-21. MSME disbursals are projected at Rs. 35,197 crore, accounting for 28.85% of the priority sector credit outlay.

5.2.3.2 Prime Minister's Employment Generation Programme (PMEGP)

PMEGP is a credit linked subsidy programme targeted at newly established micro enterprises. At the state level, it is implemented by three agencies: Telangana Khadi and Village Industries Board, Khadi and Village Industries Commission, and District Industries Centres. During the period 1st April to 18th December 2020, Rs. 8.1 crore worth of margin money was disbursed to 836 units.

Table 5.2

Incentives sanctioned under T-PRIDE 2014-2020

	Subsidy sanctioned		Subsidy released	
	No. of Units	Amount (Rs. crore)	No. of Units	Amount (Rs. crore)
2014-15 to December 2020	37,818	1,839	24,493	1,112
2020-21 (up to December)	4,706	205	1,387	95

Source: Commissionerate of Industries

Figure 5.6

Category wise MSME details from 2014 to December 2020

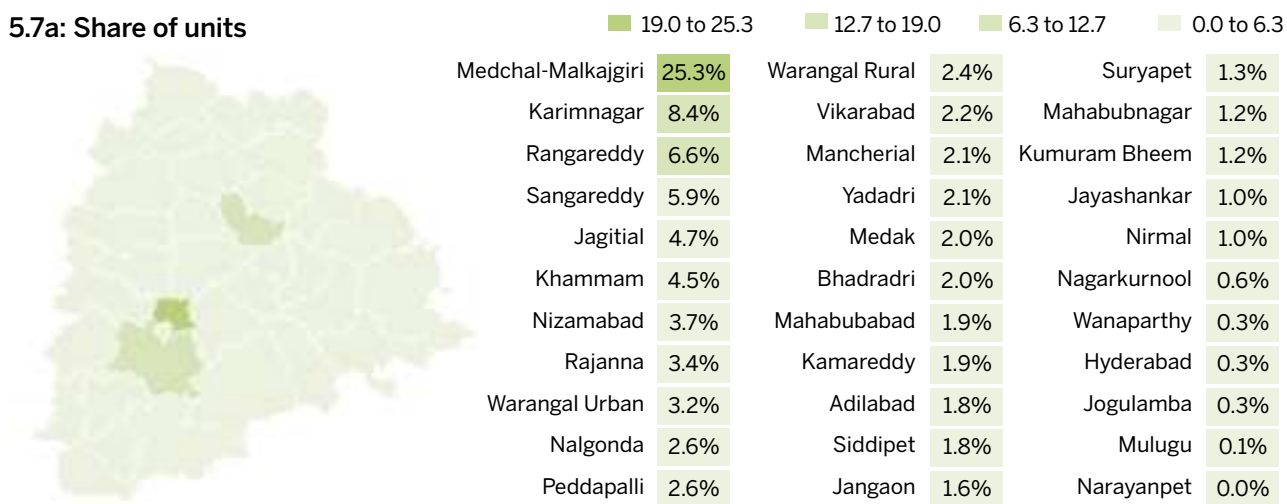
	No. of units	Investment (Rs. crore)	Employment generated
Micro	8,094	2,600	81,121
Small	4,923	11,865	1,31,942
Medium	362	4,000	30,493
Total	13,379	18,465	2,43,556

Source: TS-iPASS

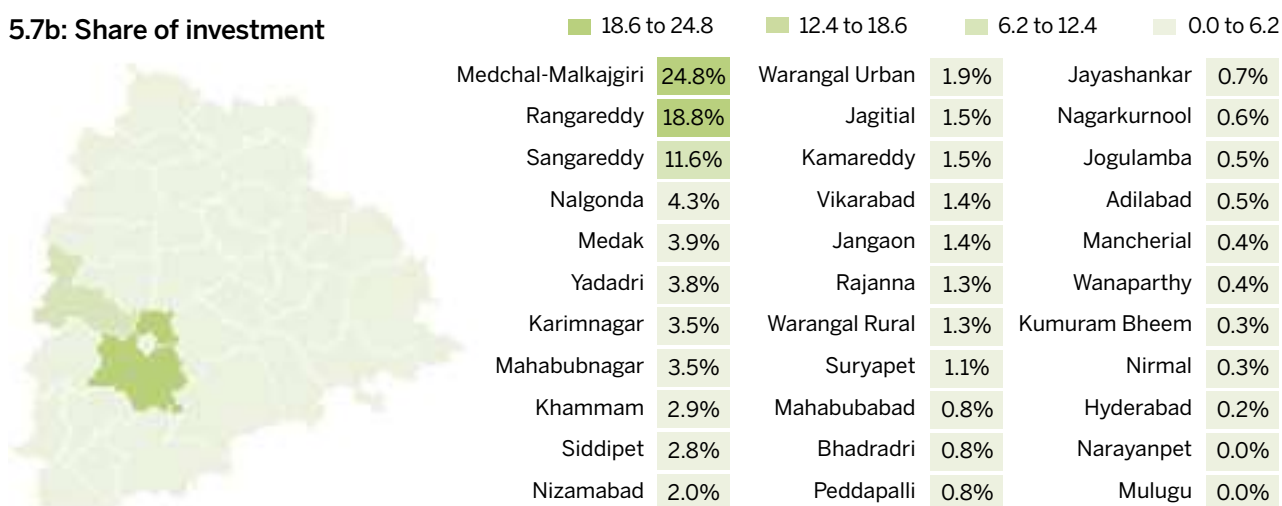
Figure 5.7

District-wise share of MSME units, investment and employment (2014 to March 2020)

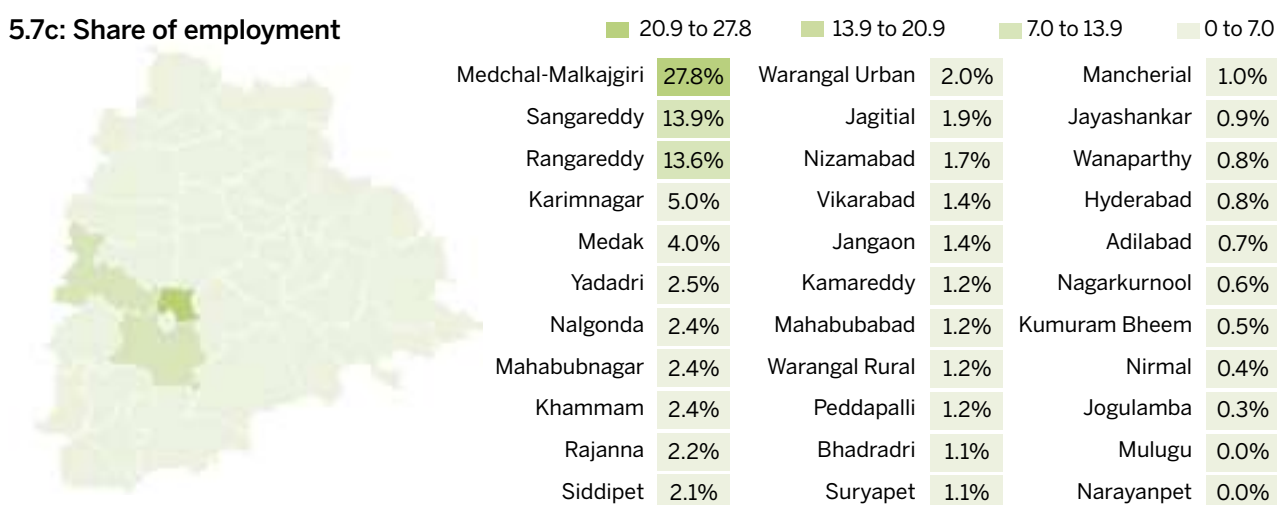
5.7a: Share of units



5.7b: Share of investment



5.7c: Share of employment



Source: TS-iPASS

Box 5.1

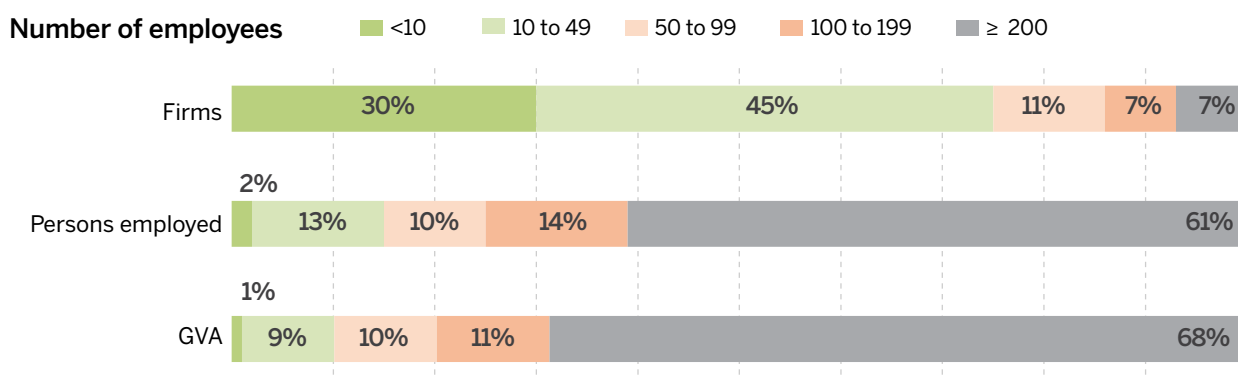
Importance of Scale for Employment Generation

While the Government is committed to helping MSMEs generate employment, it also focuses on improving the scale of the existing enterprises and attracting large investments as part of its Industrial Policy. When large firms start operations in a district, they directly employ a significant number of people and can substantially increase the manufacturing GVA of the region. In 2017-18, firms in the state with over 200 employees created 61% of the formal manufacturing jobs and contributed 68% to the GVA, though they represented only 7% of the number of firms (see Figure 5.8). Further, firms in this category on average pay their employees 2.43 times higher wages compared to firms that employ less than 10 employees (see Figure 5.9).

Cognizant of this, the Government has taken steps to promote the growth of 'Mega Projects', defined as projects with an investment of over Rs. 200 crore in plant and machinery or employment above 1,000 persons. Such projects receive land allotments from the State Industrial Promotion Committee (SIPC) headed by the Chief Secretary, and are also eligible for tailor made industrial incentives. Apart from their direct contribution to employment and output, large firms can also contribute to the growth of ancillary industries that supply raw materials, component parts, or industrial services to large firms. Accordingly, 'Mega Projects' are also required to promote the growth of local industries and strengthen value chains.

Figure 5.8

Distribution of firms, number of persons employed, and GVA across formal manufacturing firms of different employment sizes



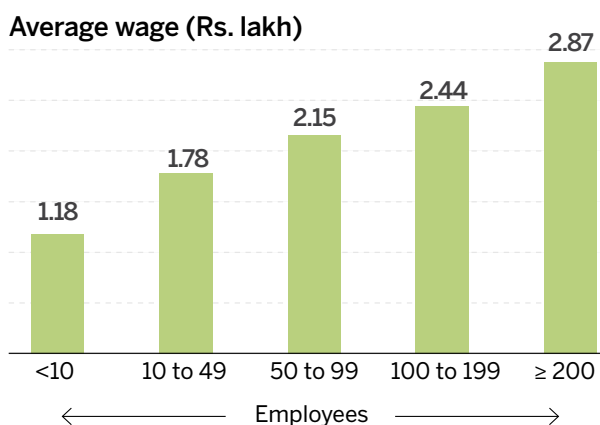
Source: Annual Survey of Industries 2017-18

5.2.3.3 Telangana Industrial Health Clinic

Telangana Industrial Health Clinic was set up in 2017 as a Non-Banking Finance Company (NBFC), with a corpus of Rs. 100 crore, Rs. 10 crore of which is funded by the Government. The organization provides a variety of services, such as:

Figure 5.9

Average wage of employees in formal manufacturing firms of different employment sizes (Rs. lakh)

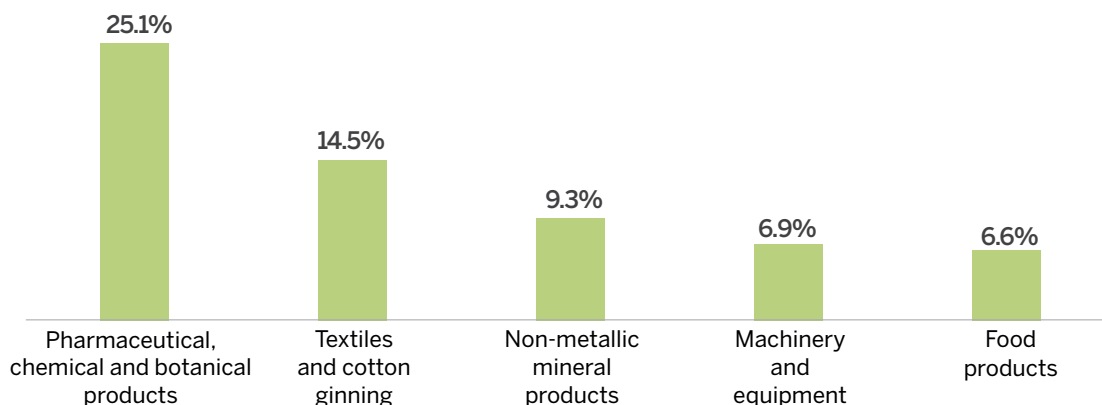


Source: Annual Survey of Industries 2017-18

Figure 5.10

Top manufacturing sectors in terms of 2019-20 Gross Value Added (GVA share)

GVA share 2019-20



Source: Directorate of Economics and Statistics

- Rehabilitation of sick micro and small enterprises that are facing financial stress. Units that are non-willful defaulters can approach the organization, after which a diagnostic study is conducted to provide entrepreneurs with a revival plan.
- Loans to stressed enterprises for repayment of a 'critical amount', which could prevent them from slipping into the Non Performing Assets (NPA) category on the books of their primary lender (bank/NBFC/State Financial Corporation).
- Special plans to provide financial assistance to firms owned and managed by women entrepreneurs in the state. This includes assistance to both newly established firms as well as units that are facing financial stress.

5.3 Sectoral Spotlights

Figures 5.10 to Figure 5.13 illustrate which sub-sectors in the state perform best in terms of (i) GVA, (ii) GVA growth, and (iii) average employee productivity. Key takeaways are:

- As Hyderabad and its surrounding districts comprise one of India's biggest pharmaceutical manufacturing hubs, it is unsurprising that

pharmaceuticals, chemicals, and botanical products is the top industry group in terms of GVA. There are several large private pharmaceutical companies in the state. A noteworthy public sector unit in the chemical products space is Ramagundam Fertilizers and Chemicals Limited (RFCL), in Peddapalli district. The unit was incorporated in 2015 and the Government has 11% equity in the organization.

- Other sectors that rank top-5 in terms of GVA include: textiles and cotton ginning, non-metallic mineral products (e.g. sand, granite, cement), machinery and equipment, and food products (see Figure 5.10 and Figure 5.11).
- In terms of GVA growth, coke and refined petroleum products is the fastest growing sector (see Figure 5.12). Installation of machinery and equipment has the highest productivity measured in terms of average GVA per employee (see Figure 5.13).

5.3.1 Life Sciences and Pharmaceuticals

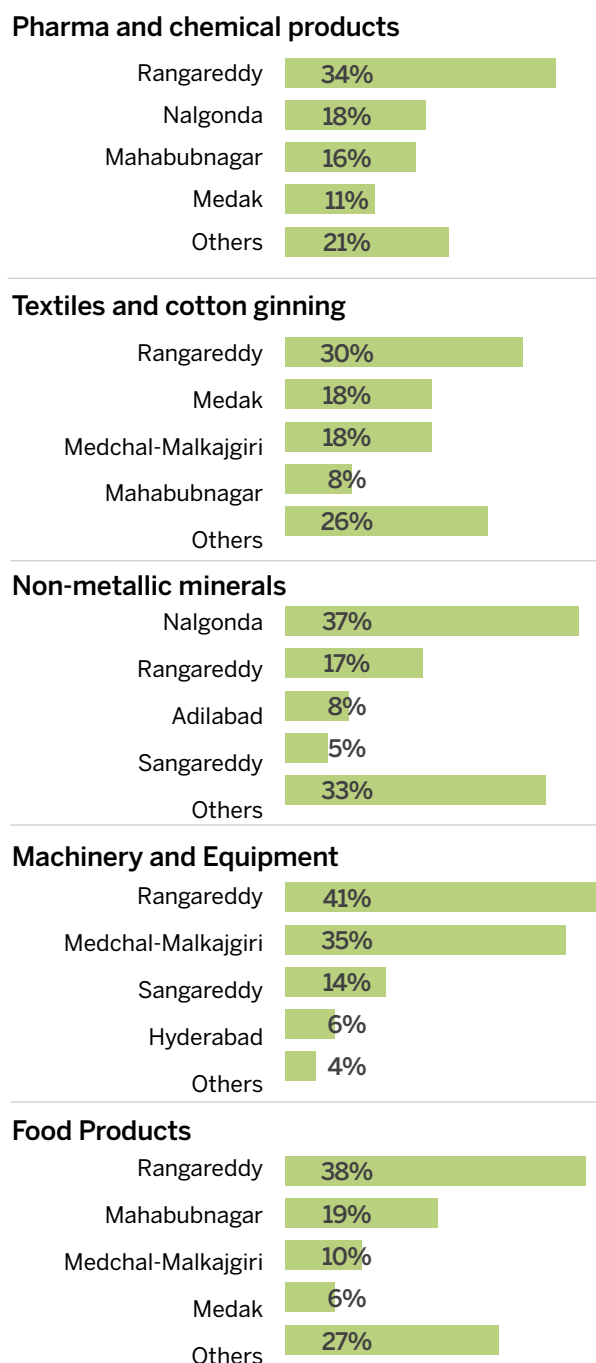
Life sciences and pharmaceutical industries continue to spearhead manufacturing growth in the state. They have attracted investments worth Rs. 11,846 crore and generated employment for more than 70,000 people in the last 4 years. In 2019-20, exports of the state's pharmaceutical products were valued at Rs. 16,705 crore.

5.3.1.1 COVID-19: Response of Telangana's Pharmaceutical Sector

The state's pharmaceutical sector has made significant contributions to the COVID-19 response. It has manufactured and supplied life-saving drugs in bulk quantities including Remdesivir and Favipiravir, used to treat COVID-19 patients. One of the first RT-PCR test kits approved by the Indian Council of Medical Research (ICMR) was from Hyderabad and since then, a number of companies have developed additional RT-PCR kits, rapid test kits, viral transport mediums, reagents and technology-based diagnostics solutions.

Figure 5.11

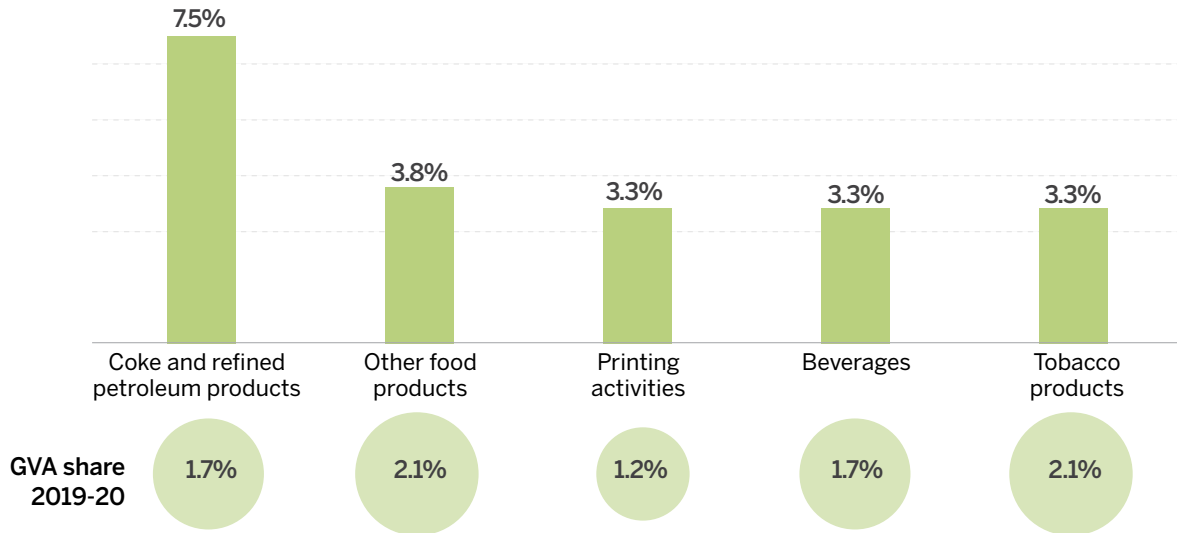
District shares of top 5 manufacturing sectors



Source: Annual Survey of Industries 2017-18
Note: ASI data for 2017-18 was used to estimate district shares, as Directorate of Economics and Statistics GVA figures are not available at the district-industry level. The shares of the top 4 sectors total to approximately 70% or higher.

Figure 5.12

Top manufacturing sectors in the state by GVA growth (compounded annual growth rate from 2017-18 to 2019-20)



Source: Directorate of Economics and Statistics

Importantly, the first indigenously developed vaccine for COVID-19, Covaxin, comes from Bharat Biotech, a Hyderabad-based company. Other companies from the state like Biological E and Dr. Reddy's are also engaged in the development and manufacture of COVID-19 vaccine.

Currently, biotech companies in and around Hyderabad contribute to 1/3rd of the world's vaccine production.

5.3.1.2 Development of Specialized Medical Clusters

- Genome Valley, spread over 600 square kilometres in Hyderabad, is India's first and largest life sciences manufacturing and R&D cluster. Three of the largest vaccine manufacturers in India are already in Genome Valley, and now the cluster is playing an important role in COVID-19 vaccine development.
- The Medical Devices Park, launched in 2017 at Sultanpur in Sangareddy district, continues to be the destination of choice for leading medical devices companies in the country. Spread across 302 acres, 92 acres have already been allotted (more than 50% of the allottable land) to 37

companies. Total investment envisaged for the park is Rs. 1,130 crore and total targeted employment is 5,925.

- Spread across 19,000 acres, Hyderabad Pharma City is the world's largest pharmaceutical industrial park. In December 2019, the Government of India granted National Investment Manufacturing Zone (NIMZ) status to the project. It is expected that the project will attract around Rs. 71,000 crore in investment and generate 5.6 lakh jobs.

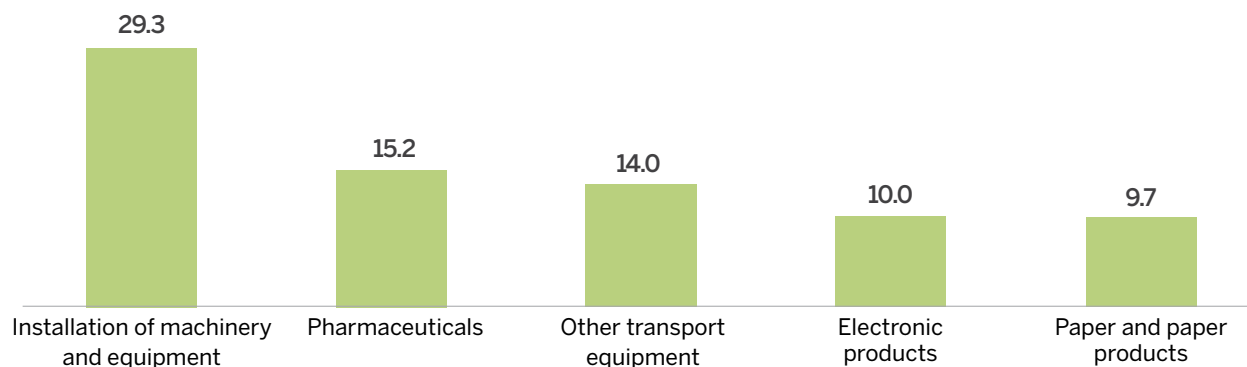
5.3.2 Electronics

The state is home to several global companies specializing in electronics manufacturing, such as Intel, Micron, Qualcomm, Nvidia, Motorola, AMD, CDAC, Apple, Oppo, One Plus and Micromax. Encouragingly, a number of companies, such as Micromax, Radiant, HFCL and HSIL, have made repeat investments in the state. The state has attracted over Rs. 7,500 crore worth of investment, with employment generation potential of over 20,000, in the last two years under its Electronics Policy 2016.

Figure 5.13

Top sectors by productivity

GVA per employee in 2017-18 (in Rs. lakh)



Source: Annual Survey of Industries 2017-18

The state has two electronics manufacturing clusters near Hyderabad (E-city at Raviryal and Maheshwaram Science Park). They are spread in an area of 912 acres and 30 units have been established so far, and are a key part of the state's approach to make Hyderabad the hub of Electronic System Design Manufacturing (ESDM). Two new industrial clusters are designated as the Electric Vehicle Cluster and the New Energy Park to promote electric vehicle and energy storage systems manufacturing in Divitipally (in Mahabubnagar district) and Chandanavelly (in Rangareddy district).

5.3.2.1 Electric Vehicle and Energy Storage Policy 2020-2030

In order to bring down the total cost of transportation, reduce vehicular emissions, and make the state a hub for electric vehicles and energy storage systems, the Government has formulated the Electric Vehicle and Energy Storage Policy 2020-2030.

The policy provides waivers of road tax and registration charges for the first 2 lakh electric two-wheelers, 20,000 electric three-wheelers, 5,000 electric cabs/taxis, 10,000 electric light goods carriers, 5,000 electric private cars, and 500 electric buses and electric tractors, purchased and registered within the state.

Several companies, including Olectra, Mytrah, Exicom, ChargeXO, Pure EV, ETO and Gayam Motors have entered into MoUs with the Government of Telangana to set up manufacturing units in the electric vehicle and energy storage sectors. The Automotive Research Association of India (ARAI) proposes to set up a testing and certification facility in the state.

5.3.3 Mining

The state has a rich variety of minerals suitable for mining; 76,974 hectares of land has been leased for mining and quarrying activities. Major minerals by production value include coal, gravel, granite, limestone (used in cement), sand, laterite and quartz. In terms of number of units, major industries include granite cutting and polishing (36%), stone crushing (23%), brick kilns (12%), stone slabs or napaslab (9%) and concrete ready mix (6%). In 2020-21, the top districts (and mineral resources) in terms of mineral revenue collection are: Siddipet (granite, quartz, sand), Karimnagar (granite, laterite, sand), Suryapet (limestone, granite, stone metal), and Mahabubnagar (road metal, quartz, feldspar).

The Government helps utilize this natural endowment in a sustainable and eco-friendly manner in line with

the National Mineral Policy, 2019. It processes mineral concession applications, grants leases for minor minerals, approves mine plans, inspects mines, curbs illicit mining, collects mineral revenues and enables mineral exploration.

The Telangana State Mineral Development Corporation (TSMDC) is responsible for developing mineral resources through exploration and mining activities. TSMDC was declared a National Exploration Agency (NEA) by the Ministry of Mines in 2016, and has taken up exploration of minerals within and outside the state. TSMDC also promotes the utilization of mineral resources, both through its own mining activities and through contracts that it awards to private companies.

A key area of involvement of TSMDC is sand mining. As per the Sand Mining Policy, 2014, sand from certain streams is entrusted to TSMDC for extraction and supply. Accordingly, TSMDC has established a robust system for extraction of sand, stocking the sand, and sale of sand through an online Sand Sales Management and Monitoring System (SSMMS) portal. Additionally, a unique 'sand taxi service' is launched that facilitates door step delivery of local sand through an online booking system. The corporation also runs a call centre to monitor and curtail illegal sand mining in the state. The sale of sand has contributed Rs. 3,715 crore to the state exchequer since 2014, with Rs. 806 crore contributed in 2019-20. A portion of this revenue is added to the District Mineral Foundation, which is used for schemes to uplift the local tribal population, construct roads and provide school infrastructure.

Another prominent Government undertaking is Singareni Collieries Company Limited (SCCL), a coal mining company jointly owned by the Government of Telangana and Government of India on a 51:49 equity basis. The Singareni coal reserves stretch across 350 km of the Pranhita-Godavari Valley of the state with vast geological reserves aggregating to 8,791 million tonnes. SCCL is currently operating 18 opencast and 27 underground mines in four districts of the state, with a manpower of 48,942.

5.3.4 Handloom, Textiles and Handicrafts

5.3.4.1 Handlooms and Powerlooms

The Government is implementing various schemes for the development of both the handloom and powerloom sectors, including the Nethanna ku Cheyutha (Thrift Fund Scheme), Chenetha Mithra (Wage Compensation Linked Input Subsidy), Powerloom Weavers Thrift Fund Scheme, and the loan waiver scheme. The Government has surveyed and issued geo-tagged numbers to 17,573 handloom weavers and 38,262 powerloom workers in the state. This data is being used to transfer benefits to them.

Given the impact of the COVID-19 pandemic, the Government has relaxed the lock-in period of 3 years to enable weavers to withdraw funds from recurring deposit accounts under the Thrift Fund Scheme. Furthermore, the Government has released Rs. 64.3 crore to over 20,537 handloom weavers and Rs. 6.3 crore to 4,301 powerloom weavers as part of the Thrift Fund Scheme.

5.3.4.2 Textiles

The state is best known for the production of long staple cotton, which is highly regarded globally. The Government has formulated the Telangana Textile and Apparel Policy (T-TAP) 2017-22 and has invested in infrastructure to make the state a hub for the textile industry—with a focus on spinning, weaving, knitting, processing and garment manufacturing. The Kakatiya Mega Textile Park (KMTP) is being established to develop Warangal as a textile hub. The foundation stone of the park was laid in October 2017, and the park spans 2,000 acres covering the entire value chain—from ginning to garment making. The park is being developed to include world class infrastructure, a common effluent treatment plant, and state-of-the-art machinery. MoUs have been signed with 22 investors for an investment flow of Rs. 3,400 crore and employment commitment for 28,800 people. It has a total project outlay of Rs. 1,552 crore. Another relevant hub is the Malkapur Textile Park at Choutuppall Mandal

in Yadadri District. The park has a total project outlay of Rs. 3.31 crore, funded entirely by the Government.

5.3.4.3 Handicrafts

The state houses many artisanal clusters that produce items such as furniture, toys, silver filigree, brass and bangles. Two prominent regions include Nirmal and Karimnagar. Nirmal is known for its distinct furniture and toys. For instance, in 2009, Nirmal painted furniture received Geographical Indication rights, which are given to products that have a specific geographical origin. In addition, a large variety of toys and paintings are produced by local Naqash artisans in Nirmal. Karimnagar district is home to many highly skilled artists who practice a delicate form of craftsmanship called filigree. They are skilled in creating various articles through silver filigree, such as spoons, buttons boxes, ashtrays, jewelry, buttons, pill boxes and perfume containers. Karimnagar silver filigree also received Geographical Indication (GI) status in 2007.

The state also has distinct forms of metal artware produced in specific regions. Examples include Dokra bell metal craft, Bidriware and Pembrothi metal craft:

- Dokra is a form of ancient tribal metal craft practiced in Ushegaon village of Jainoor Mandal in Adilabad district. Dokra artefacts are made in brass using the lost wax method; finished pieces do not have any form of joints.
- Bidriware is a renowned metal handicraft that derives its name from Bidar, presently in Karnataka. It was introduced to the state by the Nizam of Hyderabad. Bidriware is also used for making vases, bowls, ornament boxes, earrings, trays and other jewellery and showpiece items. Common motifs include flowers, leaves, geometric designs, stylized poppy plants, human figures, etc.
- Pembrothi metal craft is a popular metal handicraft made in Pembrothi village of Jangaon district. Pembrothi craftsmen create decorated individual items such as betel nut cases or paandaans, perfume containers or ittar pots, hanging metal

chandeliers or jhummars, vases, special plaques and mementos.

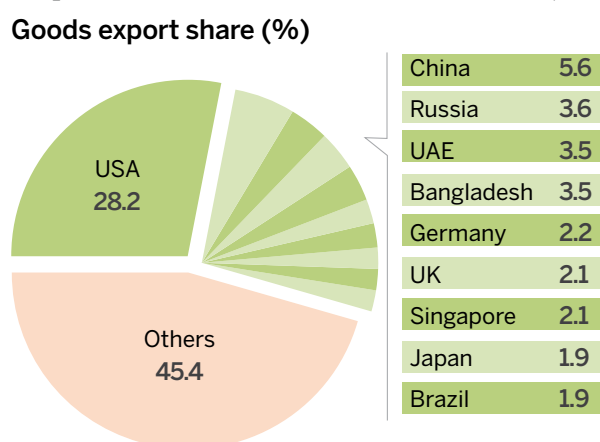
The primary objective of Telangana State Handicrafts Development Corporation Limited (TSHDC) is to promote the development and marketing of artistic handicrafts and textiles, to enhance the welfare of more than one lakh craft persons working across the state. TSHDC operates 7 sales emporias in the state and one each in New Delhi and Kolkata, as well as one production center in Hyderabad under the brand name Golkonda Handicrafts.

5.3.5 Exports

In 2019-20, the state exported a total of Rs. 1.8 lakh crore, 28.8% of which was goods exports and the remaining 71.1% services exports. In terms of total goods exports, the state started from Rs. 35,444 crore in 2015-16 and reached Rs. 52,170 crore in 2019-20, with a strong compounded annual growth rate of 10.2% per annum over this period. The top three destinations of goods exported from the state include the USA, China and Russia. The state ranks 6th in export preparedness (2nd among landlocked states), according to NITI Aayog's Export Performance Index Report 2020 (see Figure 5.14). It ranks 5th on the

Figure 5.14

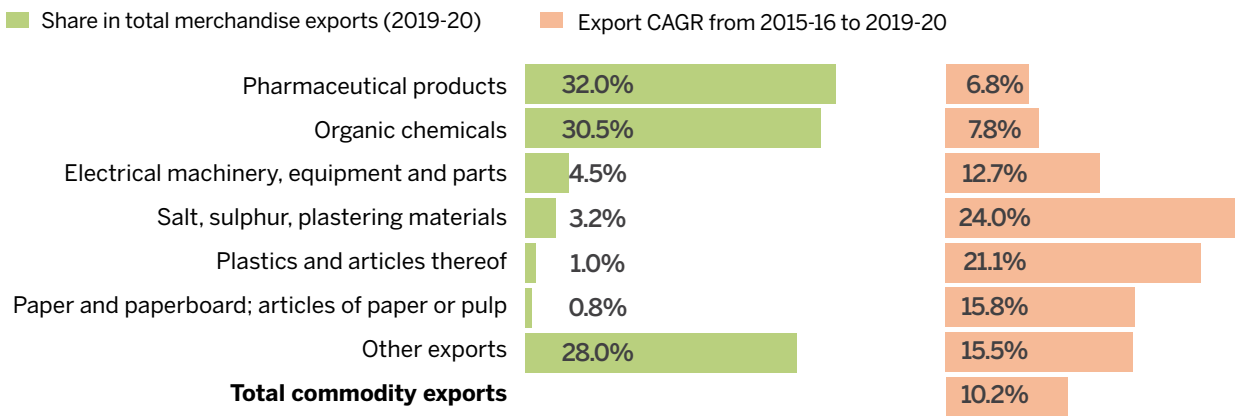
Top 10 countries to which Telangana exports goods (Goods export share for 2019-20 in %)



Source: State Export Commissioner

Figure 5.15

Major export sectors (based on high export shares and growth rates)



Source: State Export Commissioner

Logistics Ease Across Different States (LEADS) index, and 2nd among landlocked states.

Pharmaceutical products are the largest exported items from the state, accounting for approximately one-third of all exports. The state is also successfully diversifying its export basket, with rapid growth in sectors such as plastic and paper products.

The Government has started work on the One District One Product scheme, which aims to identify and promote products that have a high market potential for both export promotion and import substitution. The Government issued orders in November 2020 to set up District Level Export Promotion Committees to prepare and implement District Export Plans with the support of the District Collector.

5.4 Way Forward

The industrial sector is a key part of the Government's strategy to promote prosperity in the state, and it has seen marked improvements in recent years. Prior to the state's formation, between 2011-12 and 2014-15, the

industrial sector experienced low or negative growth. In 2015-16, however, the sector grew by 21.4%. This was driven by the manufacturing sub-sector, which grew by 32.1% as compared to the 7.5% contraction in the previous year. In recognition of the improved business environment, the state's Ease of Doing Business rank rose from 13th in 2015 to 1st in 2016, after which the state has maintained a consistent top-3 ranking nationally.

The Government has taken steps to ensure improvements in infrastructure, facilitation of approvals, access to incentives, and grievance redressal through close engagement with industry associations. As a flagship initiative, the Telangana State Industrial Project Approval and Self-Certification System (TS-iPASS) Act, 2014 was established for speedy processing of applications to set up industries in the state. In the coming years, the Government will continue working towards setting up world class industrial estates, promoting technology upgradation, facilitating skilling and ensuring export competitiveness.

CHAPTER 6

SERVICES



Key Highlights

The service sector has played a critical role in India's growth story, and the same can be said for Telangana—particularly the IT sector. The Government is actively promoting service sector firms across all stages of their life cycle, through a range of initiatives and schemes. Key highlights include:

- Investment promotion efforts of the Government have attracted large corporates such as Google, Microsoft and Amazon to set up their national headquarters in Hyderabad.
- The ICT Policy, launched in 2016, has boosted investment and employment generation, and thus augmented growth.
- To equip the youth of the state to become part of the fast-growing IT sector, the Government established the Telangana Academy for Skill and Knowledge (TASK) to provide essential skills training.
- Initiatives such as Technology-Hub (T-Hub), Women Entrepreneurs Hub (WE Hub), and T-Works are working to promote entrepreneurship and innovation in the state.



6.1 Role of Services in Telangana and Recent Trends

6.1.1 Overall Services Growth and Contribution to GSDP

The service sector contributes significantly to the economy of the state, with a 60.3% share in GSDP, higher than the 54.3% contribution of the sector at the all-India level in 2020-21. Sub-sectors within services include trade and repair services, private software and IT services, real estate, financial services, transportation and incidental services, and several others (see Figure 6.1). The annual growth rate of services in the state has outpaced the growth rate of the sector at the all-India level (see Figure 6.2). Further, financial, real estate, and professional services contribute more to the growth of services in the state than they do to the growth of services at the all-India level. IT is the largest sector in this group and is consequently a key driver of growth in the state, with Hyderabad emerging as one of the world's leading IT hubs. The Government has attracted several large service sector firms through focused investment promotion efforts. Google, Microsoft and

Amazon have their India headquarters at Hyderabad, and several other companies such as Facebook and IBM have set up offices in the city.

6.2 Major Government Initiatives

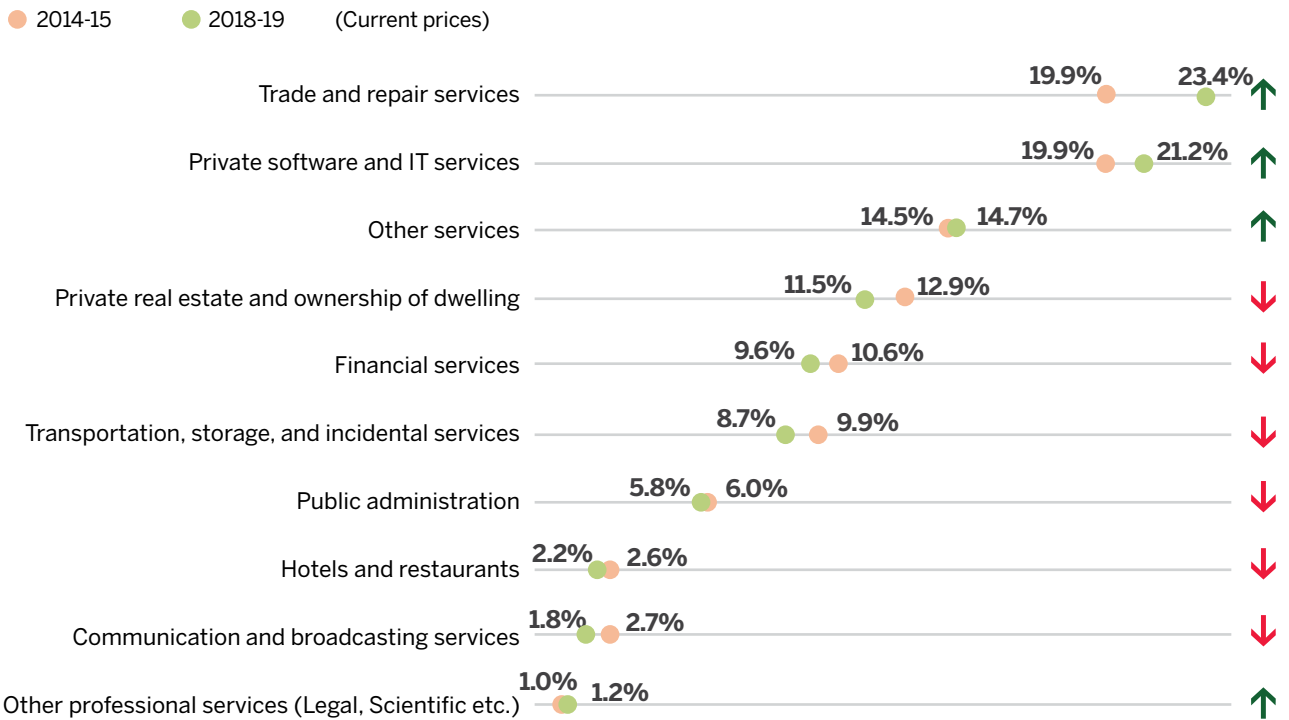
6.2.1 Telangana Academy for Skill and Knowledge (TASK)

Telangana Academy for Skill and Knowledge (TASK) is a not-for-profit organization established in 2014 by the Government—involving academia, industry and the Government itself—to transform the youth of the state into valuable assets in the Indian and global workplace. TASK works on three primary areas:

- **Education:** educating students on the latest technologies that do not feature in the current academic curriculum
- **Entrepreneurship:** building an entrepreneurial temperament among students and guiding budding entrepreneurs
- **Employability:** enhancing employability by enhancing the professional, organizational and personal skills of the youth in the state

Figure 6.1

Share of sub-sectors in services within Telangana (2014-15 & 2018-19)



Source: Directorate of Economics and Statistics

Note: The sub-sectors 'Private Software and IT Services', 'Private Real Estate and Ownership of Dwelling', and 'Other Professional Services (Legal, Scientific, etc.)' fall under the standard GSDP reporting category 'Real Estate, Ownership of Dwelling and Professional Services'.

Table 6.1

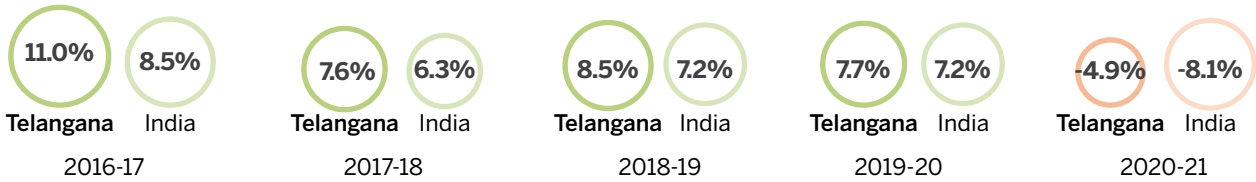
Initiatives under TASK

Initiative	Objective	Progress (2015-2020)
Finishing schools	To train unemployed youth with graduate degrees in engineering and life sciences in specific technologies/skills required for specific jobs	No. of youth trained: 9,989; placed: 5,873
Essential skills training	To train students in soft skills (e.g. English language, campus to corporate transition, aptitude/reasoning)	No. of students trained: 39,434
Faculty development programmes	To equip faculty with the non-technical skills required to become better teachers	No. of faculty trained: more than 2,500
Electronic System Design & Manufacturing (ESDM) (central government scheme part of Make in India)	To facilitate skill development among students/unemployed youth to enhance their employability in manufacturing and service support functions	No. of people trained: 9,314; certified: 6,785 (progress till January 2021)

Figure 6.2

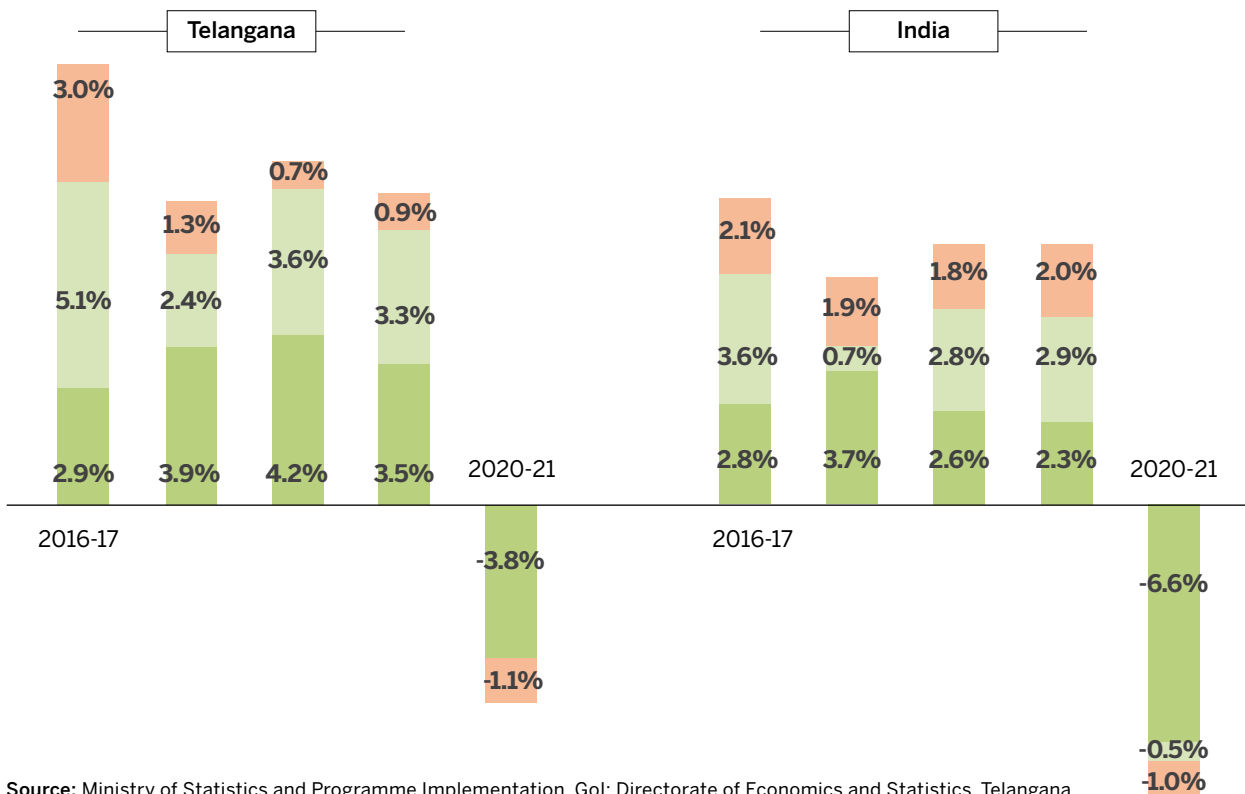
Contribution to growth of services GDP at constant prices

Growth in services GDP



Contribution to growth in services GDP

- Trade, Hotels, Transport, Communication and Services Related to Broadcasting
- Financial, Real Estate & Professional Services
- Public Administration, Defence and Other Services



Source: Ministry of Statistics and Programme Implementation, GoI; Directorate of Economics and Statistics, Telangana

TASK provides students with internship opportunities, industrial training and industrial visits. Additionally, TASK has a placement department that helps students find suitable job opportunities.

6.2.2 Telangana State Innovation Cell (TSIC)

Telangana State Innovation Cell (TSIC) was

established in 2017, under the state’s Innovation Policy, to nurture early-stage startups and foster an innovation-driven economy in the state. It is a single window for administering all incentives announced in the innovation policy for startups and incubators. Priority is given to the early-stage startup ecosystem. So far, TSIC has helped around 100 innovators, many from rural Telangana. The focus of TSIC is to expand its activities to all 33 districts and to create a model of

Table 6.2

TSIC focus areas

Focus Area	Details
Innovation in school	A training programme on innovative teaching methods was conducted for 120 government school teachers, reaching 3,600 students
District Innovation Ecosystem	<ul style="list-style-type: none">● A first-of-its-kind meetup among 120 innovators and aspiring entrepreneurs to sensitize them about opportunities, skills, workshops and access to district resources● Conducted in 5 districts: Warangal, Nizamabad, Karimnagar, Khammam and Mahabubnagar
Community building to promote innovation	<ul style="list-style-type: none">● 100+ ecosystem players were assembled to drive the innovation scene of Hyderabad, e.g. a community of 120+ SaaS (software as a service) founders' formed in the city● 4 incubators were set up in 2019--OPPO, MJHUB (Muffakham Jah College, Hyderabad), NMIMS Innovation Center, Edventure Park● 33 District Administrations have been sensitized about rural innovation through the first state-level Intinta Innovator Exhibition, which scouted 300+ innovators and exhibited 220 of them● Additionally, a first-of-its-kind Village Innovation Challenge was launched in 2020
Media and Communication for Innovation	The campaign aims to reach out to every member of every household to encourage them to think of themselves as problem solvers

recognition for innovators as well as mentors.

6.2.3 Society for Telangana State Network (SoFTNET)

Society for Telangana State Network (SoFTNET) is a not-for-profit organization established under the Department of Information Technology, Electronics & Communications (ITE&C). It is a SATCOM initiative for distance learning through television using satellite communications. One of the primary channels of SoFTNET, the S-SAT app, has 1,211,699 downloads to date. T-SAT Nipuna and T-SAT Vidya channels today reach over 6 million homes in the state.

6.2.4 Technology Hub (T-Hub)

T-Hub leads India's pioneering innovation ecosystem that powers next-generation products and new business models. Since its incorporation in 2015, it has provided assistance to more than 1,100 national and international startups in accessing better technology, talent, mentors, customers, corporations, investors and government agencies. The 70,000 square feet T-Hub Catalyst building is an official landmark in Hyderabad. It has been home to over 300 startups since its inception, 52 of which have gone on to raise funds and register 36 patents and trademarks. The Department of Science and Technology, Government of India has recognized T-Hub as a business incubator, the first of its kind to receive this grant outside premier institutes such as IITs and IIMs. Following the success of T-Hub Phase I, the Government has embarked on a plan to develop T-Hub Phase II. It is currently being constructed on 3 acres of land in Hyderabad, offering IT incubation space for entrepreneurs/professionals.

6.2.5 Women Entrepreneurs Hub (WE Hub)

WE Hub (Women Entrepreneurs Hub), launched in 2018 by the Government, is India's first and only state-led incubator to promote women's entrepreneurship. WE Hub provides access to technical, financial, government and policy support to enable women entrepreneurs to start up, scale up and gain access to markets. Twenty six start-ups, which were part of the first ever incubation cohort of WE Hub, graduated in September 2019. The graduating start-ups have significantly scaled operations; 24 of these start-ups have moved at least three stages. Three start-ups were selected to pilot innovative digitization and energy optimization solutions at P&G's Hyderabad plant that manufactures Ariel, Tide and Pampers.

In total, WE Hub has incubated 148 startups through two annual cohorts and helped raise Rs. 36.2 crore in funding. Further, WE Hub conducts programmes for capacity building, student mentorship, hackathons and credit linkages, through which it has engaged with 3,427 women entrepreneurs in 12 startup programmes.

6.2.6 T-Works

T-Works is India's largest prototyping centre for electronics, electromechanical and mechanical start-ups, and its vision is to create and celebrate a culture of hobbyists, makers and innovators in India, who explore and experiment without the fear of failure. Key accomplishments and initiatives include:

6.2.6.1 Product Design and Fabrication

Started product design services (PDS) with the objective to support startups, SMEs, makers and entrepreneurs for rapid prototyping/design/fabrication of their innovative products. It contributes to building the local vendor and supply chain ecosystem for procurement and fabrication requirements of startups.

6.2.6.2 Research and Development

T-Works focuses its research and development efforts on new technologies that are of use to startups. For

instance, it is designing and building unmanned aerial vehicles (UAVs) using a rapid 3D printing technology.

6.2.6.3 COVID-19 Initiatives

T-Works is working on multiple projects with the startup community to design and fabricate equipment to aid frontline healthcare workers during the COVID-19 pandemic.

- In collaboration with hospitals, startups, corporates (Qualcomm, Honeywell, Spectrochem Instruments, Entesla, Althion, Trishula and ConserVision, Micromax, Huawei), and educational institutes (IIIT Hyderabad, Nizam's Institute Of Medical Sciences, Osmania University College of Engineering) from Hyderabad, T-Works developed an affordable, clinically acceptable mechanical ventilator for emergency use during the COVID-19 pandemic.
- T-Works successfully delivered the mask design for Nanotech, a Hyderabad-based company, incorporating its graphene-based filter.
- In collaboration with NIMS and Edu-fields (a Hyderabad start-up), T-Works designed the Aerosol Box to protect frontline healthcare workers treating COVID-19 patients.

6.2.6.4 Other T-Works Initiatives

- Launch of an Intellectual Property (IP) facilitation cell in December 2019 to aid startups, SMEs, entrepreneurs, makers, MSMEs and rural innovators by providing easy access to IP Rights services at a subsidized fee; 11 applications have been successfully completed and 34 are under process.
- Component sourcing: An online platform for component sourcing that helps startups, SMEs and makers source components by reducing cost, time and complexity. T-Works is also building in-house a web portal to facilitate sourcing of electronics and mechanical components.

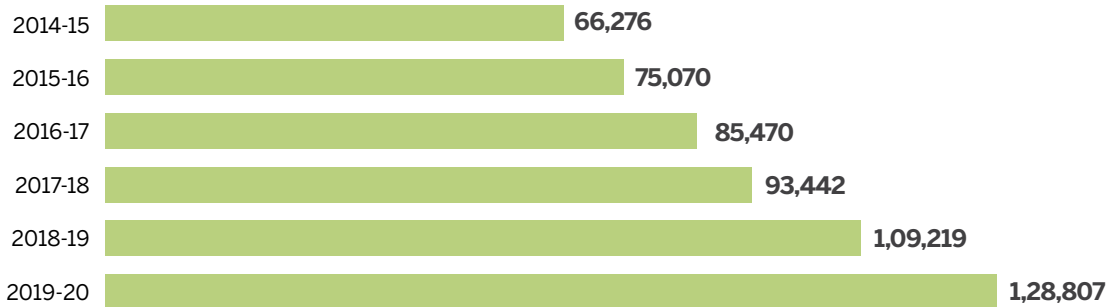
6.3 Sectoral Spotlight - IT/ITeS

Hyderabad is recognized as one of the leading

Figure 6.3

Growth in IT exports (Rs. crore)

IT exports (in Rs. crore)

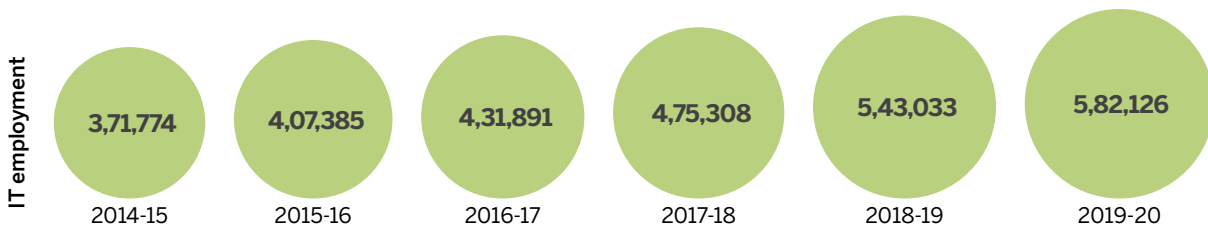


Source: Department of ITE&C

Figure 6.4

Growth in IT employment

IT employment is growing significantly in Telangana



Source: Department of ITE&C

Information Technology hubs globally. It houses more than 1,500 IT/ITeS large (Information Technology/Information Technology Enabled Services) and small companies. Hyderabad is home to some of the world's leading software companies, such as Microsoft, Google, IBM, Oracle, DELL, Motorola, Deloitte, Converges, UBS, Computer Associates, Amazon, AMD, NVidia and Capgemini.

6.3.1 Exports

In 2019-20, the total value of IT exports from the state accounted for Rs. 1.3 lakh crore—a 17.9% increase over the previous year and a significantly larger jump compared to the all-India average of 8.1% (see Figure

6.3). As a result, the state's share of IT exports in India grew from 10.6% in (2018-19) to 11.6% (2019-20). The state's overall share of India's IT export growth for 2019-20 was 23.5%.

6.3.2 Employment

Employment generated by the IT sector in the state grew at 7.2% compared to the all-India average growth of 4.9% (see Figure 6.4). The state's share in national IT employment grew from 13.1% in (2018-19) to 13.3% (2019-20). The state's overall share of India's IT employment growth for 2019-20 was 19.1%.

6.3.3 Initiatives and Schemes

6.3.3.1 Information and Communication Technology (ICT) Policy

The Government of Telangana launched the Information and Communication Technology (ICT) Policy in 2016 to boost investment and employment generation, and thus augment growth, in the IT/ITeS sector. The objective of the ICT Policy is to make the state the preferred technology investment destination in the country. The Government has also launched a number of other policies for the IT sector.

6.3.3.2 Telangana Fiber Grid

The Government launched the 'Telangana Fiber Grid (T-Fiber)' in 2015 with a vision to establish a state-of-the-art network infrastructure to provide affordable high-speed broadband connectivity from the state headquarters to all homes and enterprises in the state. T-Fiber piggy backs on the Mission Bhagiratha project and has laid more than 70,000 kms of high quality High Density Polyethylene Permanently Lubricated (HDPE PLB) duct through water pipelines for establishing last mile connectivity across the state. The work is estimated to be completed by the end of 2021.

6.3.4 Balanced IT Sector Growth

6.3.4.1 Development of Tier-II Cities as IT Hubs

The Government has unveiled a policy to augment IT sector growth and development in Tier-II cities and rural areas by constructing IT Towers in Warangal, Karimnagar, Khammam, Mahabubnagar, Siddipet, and Nizamabad districts. The IT Tower (Phase-I) in Warangal is operational and the Towers of Phase-II are under construction. The IT Tower at Karimnagar is operational while the IT Tower in Khammam is ready for occupation. The IT Towers in Mahabubnagar and Nizamabad are under construction.

6.3.4.2 New IT Clusters in and around Hyderabad

Apart from sustaining growth in the western corridor of Hyderabad, the Government has focussed on spreading IT sector growth around the city. To this end, it has launched the GRID (Growth In Dispersion) Policy to enable IT and ITeS companies to establish units in clusters outside of the western corridor. The Government is creating an IT Tower in Kompally, inaugurating a new cluster in Kollur/Osman Nagar, establishing new IT Parks in the southern region (Airport, Shamshabad), and expanding the IT footprint in the eastern region (Uppal/Pocharam).

6.3.5 COVID-19 Initiatives

6.3.5.1 T-SAT

T-SAT network channels of the ITE&C Department have helped students in the state to continue education through T-SAT Vidya and T-SAT Nipuna channels during COVID-19. SoFTNET has leveraged digital technology by telecasting video lessons through the T-SAT app and social media platforms like YouTube and Facebook. The T-SAT app has registered over 10 lakh downloads and YouTube registered 5 lakh subscribers. T-SAT is broadcasting 12 hours of education content for students from classes III to X, intermediate, as well as for preschool students at Anganwadis.

6.3.5.2 T COVID-19 Mobile Application

T COVID-19 is an all-in-one app that provides official information, precautionary guidelines, telemedicine and a multitude of other services to citizens. The app was jointly developed by the Health and IT departments in collaboration with Amazon Web Services (AWS), Cisco and Quantela, a Hyderabad based startup.

6.3.6 Focus on Emerging Technologies

The state's vision is to be a leader in emerging technologies. To translate the vision into reality, the

Government has created an Emerging Technologies Wing with the objective of nurturing a conducive emerging technologies ecosystem and the adoption of emerging technologies in government. Key policy frameworks include AI Framework (2020) and Blockchain Framework (2019).

Telangana became the first state in India to launch an actionable policy framework for artificial intelligence (AI) in June 2020. The policy is being driven by Telangana AI Mission (T-AIM), a new organization in partnership with NASSCOM. Key tenants of the strategy include ethics and privacy, provision of computing infrastructure, skilling, focus on research, and innovation to improve citizens' lives. The Government has also taken steps to facilitate the development of viable solutions: (i) AI Investment Fund for innovation in focus sectors such as agriculture, healthcare, education and law enforcement; (ii) Artificial Intelligence Innovation Accelerator to enable Hyderabad to become one of the top 25 global AI innovation hubs by 2025.

With the objective of making Hyderabad one of the top 10 blockchain cities of the world, the state has started the Blockchain District initiative. As an ecosystem approach, the initiative aims to promote blockchain through skilling, support to start-ups, investment in research and innovation, formation of local communities, and development of blockchain-based e-governance solutions. Two key initiatives to promote start-ups are: (i) T-Block Accelerator launched in partnership with Tech Mahindra; (ii) Blockchain Innovation Hub launched in partnership with IIIT Hyderabad and Dcentrum Community. A Blockchain Train-the-Trainer programme has also been launched in partnership with Intel and TASK, as a faculty development programme for the state's academia to scale its blockchain expertise.

Other key focus areas in emerging technologies include increasing drone adoption, promoting cyber security, and prompting e-waste management.

- **Drone adoption:** The Government is working to make the state India's leading drone innovation

and business centre. As an initiative to promote drone adoption, the Government is working in association with the World Economic Forum on the Medicine from the Sky project to assess the viability of integrating drones into the health supply chain, and optimizing systems to save lives in remote areas.

- **Cybersecurity Centre of Excellence:** An initiative to build a robust cybersecurity startup ecosystem with a cost of Rs. 21 crore to facilitate local and global collaborations, increase the footprint of Global Capability Centres (GCCs), and undertake capacity building initiatives
- **Centre of Excellence on E-Waste Management:** An initiative of Rs. 36 crore, in collaboration with Ministry of Electronics and Information Technology (MeitY), to create a conducive e-waste management environment that nurtures innovation, entrepreneurship and capability building.

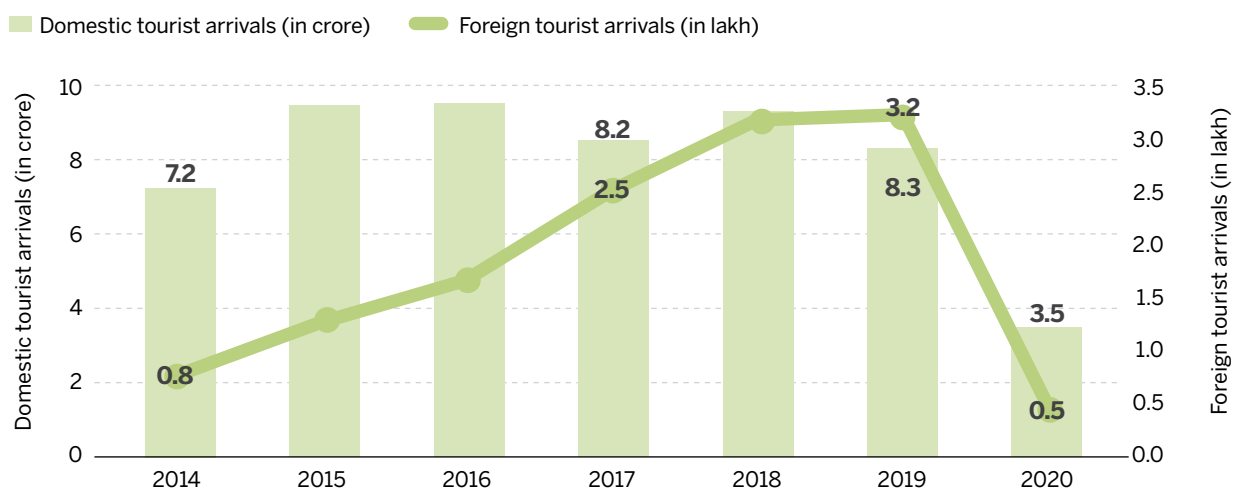
6.4 Sectoral Spotlight: Tourism

Telangana is endowed with a rich heritage, culture and varied landscape, and the Government endeavours to make the state a global tourist destination. The state has heritage sites such as the Kakatiya Fort, Rammappa Temple and the Thousand Pillar Temple at Warangal and Charminar, Golkonda Fort, Falaknuma Palace, Chowmahalla Palace and Hussain Sagar lake in Hyderabad. There are also prominent religious sites such as Lord Sri Ram Temple at Bhadrachalam, Jogulamba Temple (one of the 18 Shakti Peethas in Jogulamba district), Kolanupaka Jain Temple (Nalgonda), Mecca Masjid (Hyderabad) and the Medak Church (Medak).

The Government is promoting eco-tourism in wildlife sanctuaries at Nagarjunsagar-Srisailem Tiger Reserve, Kawal (Adilabad) and Kinnarsani (Khamman) and Kademreservoir (Adilabad). Water tourism is also being promoted with ferries set up between Bhadrachalam and Papikondalu as well as between Nagarjuna

Figure 6.5

Total tourist arrivals in Telangana - 2014 to 2020 (up to October 2020)



Source: Department of Tourism

Sagar and Srisailem. Efforts are underway for the development of new tourism destinations, e.g. Tribal Circuit at Warangal and Yadagirigutta (Nalgonda). The Government has conducted a study to prepare comprehensive district tourism development plans and identified 477 tourist destinations for upgradation of existing tourist amenities/facilities. The erstwhile districts identified with the most number of proposed tourist destinations are Hyderabad (41), Rangareddy (26), Nalgonda (23), Adilabad (21) and Suryapet (21).

The total number of tourist arrivals in the state increased from 7.2 crore in 2014 to 8.3 crore in 2019 (see Figure 6.5). Almost all tourist arrivals during this period were domestic tourists. At the same time, foreign tourist arrivals have steadily risen, increasing from 75,171 in 2014 to around 3.23 lakh in 2019. Due to the impact of COVID-19, total tourist arrivals in the state dropped from 8.3 crore in 2019 to 3.5 crore in 2020 (as of October 2020).

6.4.1 Tourism Promotion

The Government has taken steps to develop tourism infrastructure, simplify approvals and build awareness

to promote tourism in the state.

The Telangana State Tourism Development Corporation (TSTDC) was incorporated in 2014 to develop tourist infrastructure and package tours for overall development of tourism in the state. It is involved in many activities, such as maintenance of hotels and resorts (36), wayside amenities (8), transport fleet (32), water fleet (115), sound and light shows (3), arrangement of tourist packages, etc. In 2020, four new 'Haritha' resorts/hotels were made operational in the state by TSTDC. Hussain Sagar lake, one of Hyderabad's most popular tourist attractions, was built during 1562 AD for irrigation and drinking water requirements. Buddha Purnima Project Authority (BPPA) was constituted for the development of Hussain Sagar Lake and its environs, covering an area of 902 hectares. The recreational pockets developed under the project are: Lumbini Park, NTR Gardens, Lumbini Laserium, Necklace Road, People's Plaza, NTR Memorial, Sanjeevaiah Park, Lake View Park, Eco-Park, P.V.Gyan Bhoomi and Wetland Eco-Conservation Zone. Telangana Home Stay Establishment Scheme was launched to provide

a clean and affordable place for domestic and foreign tourists travelling with families to experience the customs, tradition and culture of the state.

To facilitate speedy approvals and clearances, the Government has developed an application in the TS-iPASS portal in December 2020 for speedy approvals and clearances for tourism-related services, such as registration of hotels, travel agencies and tourism events.

The Government is also promoting tourism by building awareness. Tourist Information Counters have been established at Telangana Bhavan, New Delhi and Kacheguda Railway Station, Hyderabad. To facilitate better exploration of the city, heritage walks are being organized every second Saturday and Sunday in Hyderabad. The Department of Language and Culture has organized programmes and festivals in a large and grand manner, to popularize native customs and heritage, as well as to support a number of artists. Some of the important programmes organized by the department are: State Formation Day Celebrations; Bathukamma Festival; Bonalu Festival; Kite and Sweet Festival; Janapada Jatharas; Independence Day Celebrations, etc. Apart from this,

World Tourism Day Celebrations are also organized every year on 27th September to raise awareness about the role of tourism within the international community and to demonstrate how it affects social, cultural, political and economic values worldwide.

6.5 Way Forward

Growth in services has largely been fuelled by IT and business services. Hyderabad is now recognized as one of the leading IT hubs globally and ranks 2nd in terms of total revenues from the IT sector in the country. To boost investment and employment generation, the Government launched an Information and Communication Technology Policy in 2016. It has also taken steps to ensure balanced IT sector growth in the state by developing tier-II cities as IT hubs and creating new IT clusters around Hyderabad. Furthermore, the state has tremendous potential for tourism, with a rich heritage and culture and various historical monuments and places of interest for nature lovers. The state is also an emerging hub for logistics and healthcare services. Going forward, the Government plans to build on these strengths and use them as a platform for increasing growth in the state.



CHAPTER 7

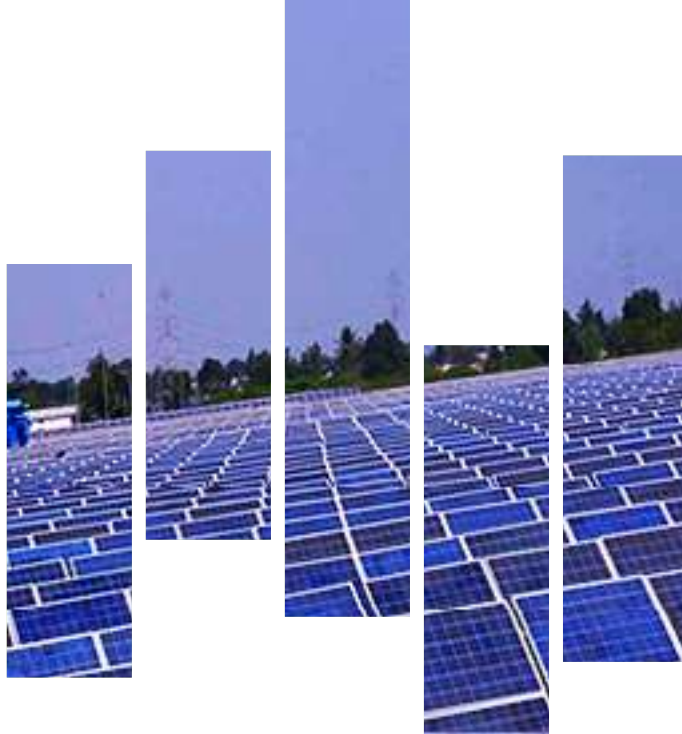
INFRASTRUCTURE



Key Highlights

The Government of Telangana is committed to building infrastructure that accelerates growth, improves citizen welfare across the state and protects the environment. To do this, the Government has implemented several schemes and initiatives in the energy, drinking water, sanitation, roads and transport sectors. This chapter highlights the progress and impact of the major schemes and initiatives in these sectors. Key highlights include:

- A substantial improvement in the power situation in the state due to the measures taken up by the Government. Telangana is one of the few states in the country with 100% electrification of households and saw the largest increase in per capita energy consumption between 2018-19 and 2019-20.
- Every household in the state has access to drinking water because of Mission Bhagiratha. This programme was an inspiration not only for the Government of India's Jal Jeevan Mission but also for other states.
- Telangana has achieved Open-Defecation Free (ODF) status because of the successful implementation of the Swachh Bharat Mission in the State.
- The Government has invested in strengthening the road network across the State and improving transport infrastructure in Hyderabad through the metrorail.



7.1 Energy

As Telangana grows, the demand for energy grows significantly. Telangana has made significant efforts and progress in developing the state's power sector. Telangana is now a power surplus state with a contracted capacity of 15,864 MW. At the same time, energy consumption must be balanced against environmental concerns. The Government is also committed to protecting the environment and is implementing initiatives to promote renewable energy sources.

7.1.1 Access to Energy and Quality of Supply

At the formation of the state, there was a peak power demand shortage of 2,700 MW, 4-8 hours of load relief to domestic and other consumers, and a 2-day a week power holiday to industries. Since then, the Government has implemented several measures which led to substantial improvements in the power situation. During 2019-20, the per capita electricity consumption of Telangana was 2,071 kWh which was

71% more than the all-India average of 1,208 kWh (Figure 7.1).

As of December 2020, there were 1.6 crore electricity consumers in the state which include 24.8 lakh agriculture consumers and 16 lakh industrial consumers. Within the state, the share of connections varies by the district (Figure 7.2). For instance, Medchal-Malkajgiri has the highest share of domestic connections (87% of all connections) while Jangaon has the highest share of agriculture connections (31%).

One of the Government's flagship programmes is to provide 24 hours of uninterrupted power supply to all consumer categories, including the agriculture sector. Agriculture connections in the state have been receiving 24x7 free power supply since 2018. This has boosted agriculture production and improved farmers' incomes (see the Agriculture chapter).

According to the India Residential Energy Survey 2020, conducted by the Council of Energy, Environment and Water (CEEW)¹, Telangana is one of the eight states in the country that has achieved 100% electrification

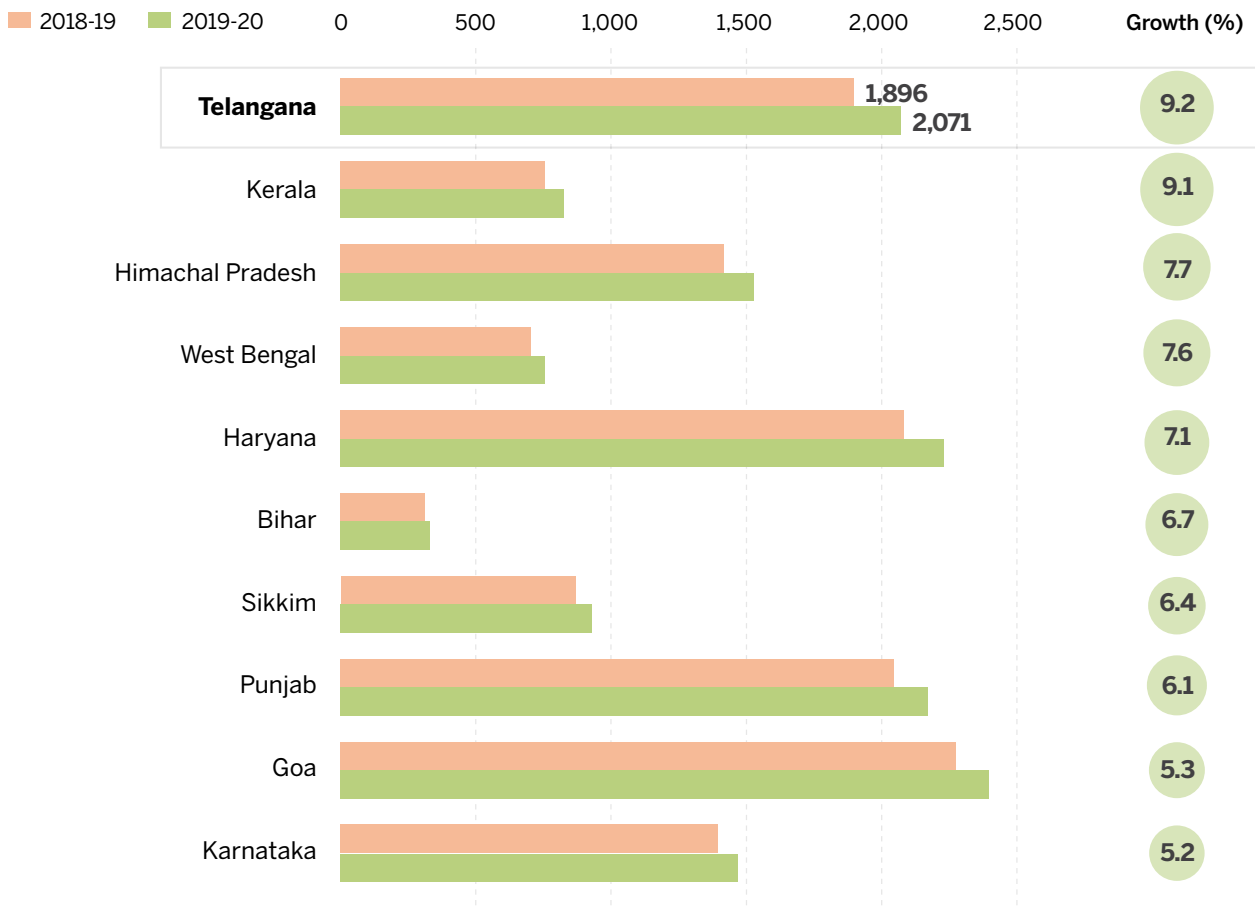
¹ Agrawal, Shalu, Sunil Mani, Abhishek Jain, and Karthik Ganesan. 2020. State of Electricity Access in India: Insights from the India Residential Energy consumption Survey (IRES) 2020. New Delhi: Council on Energy, Environment and Water.

Figure 7.1

Per-capita electricity consumption 2018-19 vs 2019-20

Telangana recorded the highest growth in per capita electricity consumption amongst states in 2019-20

Per-capita energy consumption (kWh)



Source: Central Electricity Authority

Note: The states with the ten highest growth rates presented in the chart.

to households. According to the survey, most of the respondents declared that they were satisfied with the supply and quality of electricity in the state.

7.1.2 Sources of Energy

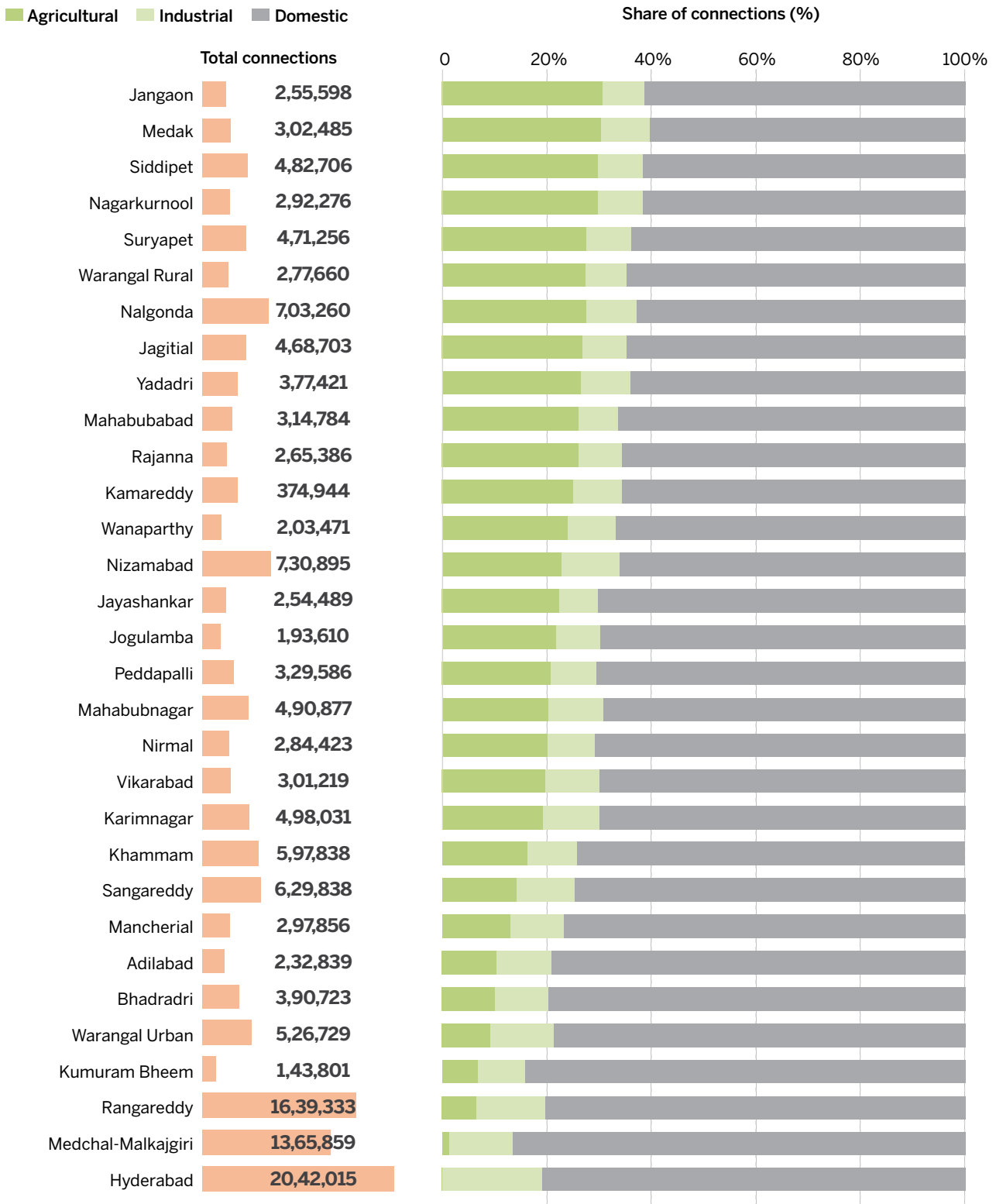
To meet the growing demand and provide universal access to electricity, the contracted capacity has been significantly increased. In 2014, the overall electricity generation capacity of the state was 7,778 MW. Since then, this has nearly doubled. In 2019-20,

the total contracted capacity in the state is 15,864 MW (including state, central and private sector shares).

Telangana State Power Generation Corporation Limited (TSGENCO) is the largest contributor to electricity generation in the state. Keeping in view, the growing demand for power in the state, TSGENCO has undertaken a capacity addition programme by establishing two new thermal power projects of 5,080 MW. The new projects are Bhadradri Thermal Power Station (4x270 MW), which has been commissioned,

Figure 7.2

Distribution of electrical connections across the state

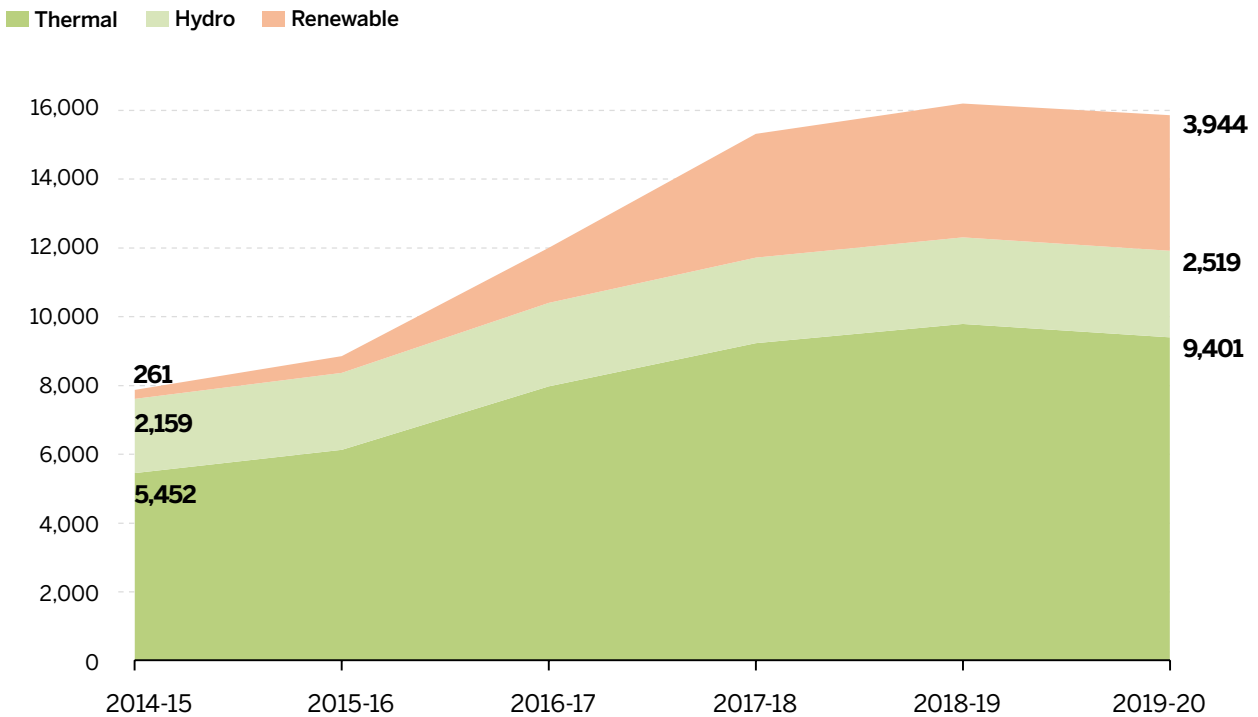


Source: Directorate of Economics and Statistics
 Note: Data not available for Mulugu and Narayanpet

Figure 7.3

Electricity generation: Contracted capacity by type and year

Contracted capacity by source (MW)



Source: Transmission Corporation of Telangana

Note: Renewable sources include solar, wind, bagasse, bio-mass, municipal/industrial waste and mini-hydel

and Yadadri Thermal Power Station (5x800 MW) which is planned to be commissioned in the next two to three years.

7.1.2.1 Initiatives for Renewable Energy

In terms of sources of electricity generation, thermal sources continue to make up more than half of the total installed capacity because of the availability of abundant coal in the state. In addition to thermal power, the share of renewable sources of energy such as solar power and biomass is also increasing.

The total installed capacity of renewable energy, including solar energy, is 3,944 MW in 2019-20. The state has vast solar potential with more than 300 sunshine days in a year. To leverage this, the Government is currently implementing the Telangana

State Solar Policy 2015. The policy aims to provide fiscal incentives for investments in green energy and the development of a conducive environment for such industries. The programmes covered under this policy include Solar Power Projects (SPPs), Solar Rooftop Projects (SRPs), off-grid applications, and solar parks. To ensure a clean and healthy environment for its citizens by bringing down carbon emissions, the Government is encouraging the use of electric vehicles in the state. It is doing so by investing in vehicle charging stations and providing special power tariffs for charging (see Industries chapter for more details).

According to the NITI Aayog's Sustainable Development Goals (SDG) India Index 2019-20, the state is a 'Front Runner' on SDG 7 on ensuring access to clean and affordable modern energy.

7.1.3 Energy Transmission and Distribution

TRANSCO manages electricity transmission in the State. It has the distinction of having the lowest transmission losses of 2.5% (up to October 2020) and the highest transmission availability in the country at 99.99%. The Government has invested Rs. 29,106 crore to strengthen electricity transmission and distribution.

The distribution of energy in the state is managed by the Telangana State Southern Power Distribution Company Limited (TSSPDCL) and Telangana State Northern Power Distribution Company Limited (TSNPDCL), which are owned and operated by the Government. To minimize the cost of power purchases, the state's DISCOMs procure power from India's power exchanges (Indian Energy Exchange and Power Exchange of India Limited). As per the Central Electricity Authority, the state procured 12% of the power traded on these power exchanges — the highest share in the country.

7.2 Water Supply and Sanitation

The Government of Telangana has initiated several steps to augment water resources for the development of the State. Broadly, the aim of the Government is to:

- Provide timely and assured water to the farming sector (for details on irrigation infrastructure refer to the Agriculture chapter)
- Provide potable drinking water to all the households in the state
- Provide water required for industrial development

7.2.1 Mission Bhagiratha

Mission Bhagiratha is a flagship scheme undertaken by the Government with the goal of providing safe, adequate, sustainable and treated drinking water to all households across the state. The quantity of water provided is 100 litre per capita per day (LPCD) in rural areas, 135 LPCD in municipalities/nagar panchayats and 150 LPCD in municipal corporations. In addition,

10% of the total water within the scheme is earmarked to meet industrial needs, which will create employment and catalyse economic growth. The project is divided into 26 segments and 34 sub-segments based on the topography, commandability, proximity and ease of connectivity from various dependable sources for providing surface-treated water supply.

As part of Mission Bhagiratha, 53,744 kilometres of transmission pipelines and 56,305 kilometres of distribution pipelines have been laid. Potable water is supplied to 23,793 rural habitations and 123 Urban Local Bodies (ULBs). In total, 100% of rural households in the state (54,00,947) have a water connection — making it only one of two states in the country with 100% functional household tap connection coverage in rural homes (see Figure 7.4). The total expenditure of Rs. 34,088 crore has been incurred till date for Mission Bhagiratha programme. Telangana also has 100% coverage of tap water supply in schools and anganwadis.

Mission Bhagaritha's success has been recognised through several awards. HUDCO presented the Government of Telangana three awards (in 2014-15, 2016-17 & 2018-19) for outstanding contribution in the infrastructure sector through innovative initiatives. The Hon'ble Union Minister for Jal Shakti awarded Mission Bhagiratha the 1st Prize under the National Water Mission Awards for increasing water use efficiency by 20% in a year. According to the NITI Aayog's Sustainable Development Goals (SDG) India Index 2019-20, the state is a 'Front Runner' on SDG 6 on ensuring access to clean water and sanitation.

7.2.2 Swachh Bharat Mission

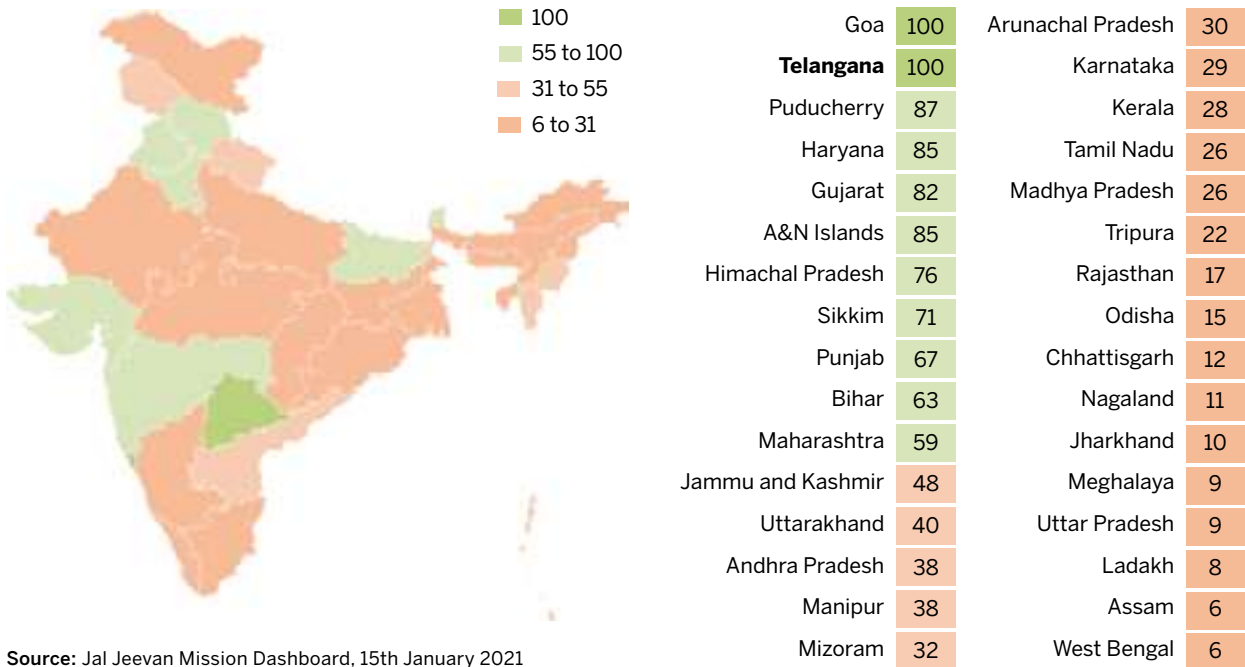
The Government of India launched Swachh Bharat Mission-Gramin (SBM-G) in 2014 to make the entire country Open Defecation Free (ODF). To achieve 100% rural sanitation in the state, the Government is constructing Individual Household Latrines (IHHLs) under SBM-G, as well as toilets in schools and anganwadis under MGNREGS. The Government has increased the incentives for building IHHL in rural areas to Rs.12,000 (Rs. 7,200 central share and

Figure 7.4

Functional household tap connections (as of January 2021)

Telangana is one of two states with 100% tap coverage

% functional household tap connection



Source: Jal Jeevan Mission Dashboard, 15th January 2021

Rs. 4,800 state share). On 31st December 2020, the state declared ODF status, owing to the 19 lakh toilets constructed in the state over the last five years under SBM-G.

SBM-G is now building on these gains to focus on other areas of sanitation such as solid and liquid wastes. This commitment aligns with the state's flagship program, Palle Pragathi. The Government has developed a robust and inclusive ODF-Plus strategy involving District Administrations and Panchayat Raj Institutions. This strategy focuses on ensuring ODF sustainability; solid waste management including biodegradable waste management and plastic waste management; liquid waste management and visible cleanliness.

7.3 Roads and Transport

7.3.1 Road Network

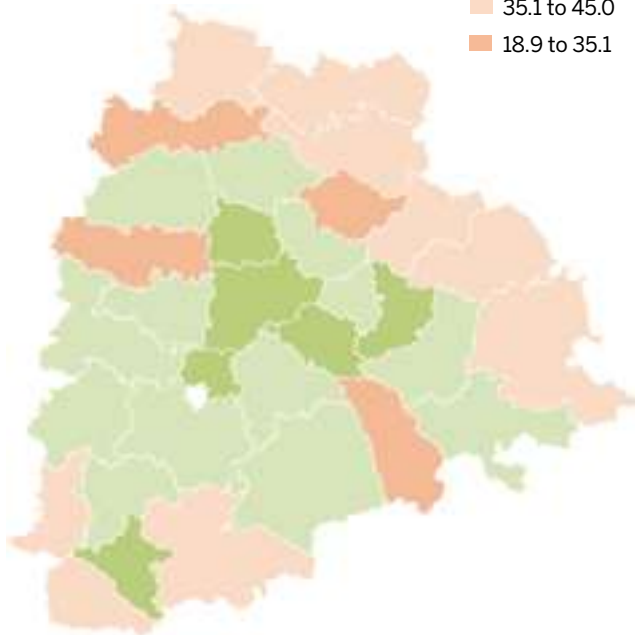
Roads are essential for a well-connected and well-functioning economy. The Government envisions the state to become a logistic hub and consequently, has invested in increasing and improving the quality of its road network. Within the Government, the Roads & Buildings (R&B) Department and the Panchayat Raj Engineering Department (PRED) are responsible for laying and maintenance of road infrastructure in the state. The R&B Department maintains a road network of 31,345 kilometres consisting of national highways, state highways, major district roads and other district roads. PRED is maintaining a road network of length 69,844 kilometres of roads in rural areas.

Figure 7.5

District-wise road density across the state

Length per Sq.Km

- 54.9 to 64.7
- 45.0 to 54.9
- 35.1 to 45.0
- 18.9 to 35.1



State average: 43.2

Warangal Rural	64.7	Rangareddy	50.4
Siddipet	60.7	Nalgonda	49.7
Medchal-Malkajgiri	60.0	Vikarabad	46.9
Jangaon	57.6	Kamareddy	43.3
Rajanna Sircilla	57.5	Peddapalli	42.3
Wanaparthy	54.9	Nirmal	41.0
Yadadri Bhuvanagiri	54.8	Suryapet	39.5
Karimnagar	54.2	Jogulamba Gadwal	32.9
Mahabubabad	54.0	Adilabad	32.6
Khammam	53.3	Jayashankar	31.8
Mahabubnagar	53.3	Bhadradri Kothagudem	30.8
Warangal Urban	53.2	Nagarkurnool	27.7
Jagtial	53.1	Mancherial	27.3
Nizamabad	52.2	Kumuram Bheem	23.3
Medak	51.0	Narayanpet	19.6
Sangareddy	50.5	Mulugu	18.9

Source: PRED and R&B

Note: Hyderabad excluded from this analysis.

To expand the road network, the Government of Telangana has invested in road construction. There are 24 National Highways in the state covering a length of 3,910 kilometres. Of which, 2,273 kilometres are operated by the National Highways Authority of India while 1,637 kilometres are under the control of the R&B Department.

The R&B Department has built 7,208 kilometres of two-lane roads, 200 kilometres of two-lane with paved shoulders; 194 kilometres of four-lane roads; 39 kilometres of six-lane roads; 269 kilometres of roads under Krishna Pushkaralu, since 2014. Additionally, 1,616 kilometres of single-lane roads connecting mandal headquarters to district headquarters have been widened to two-lane roads at a cost of Rs. 1,877

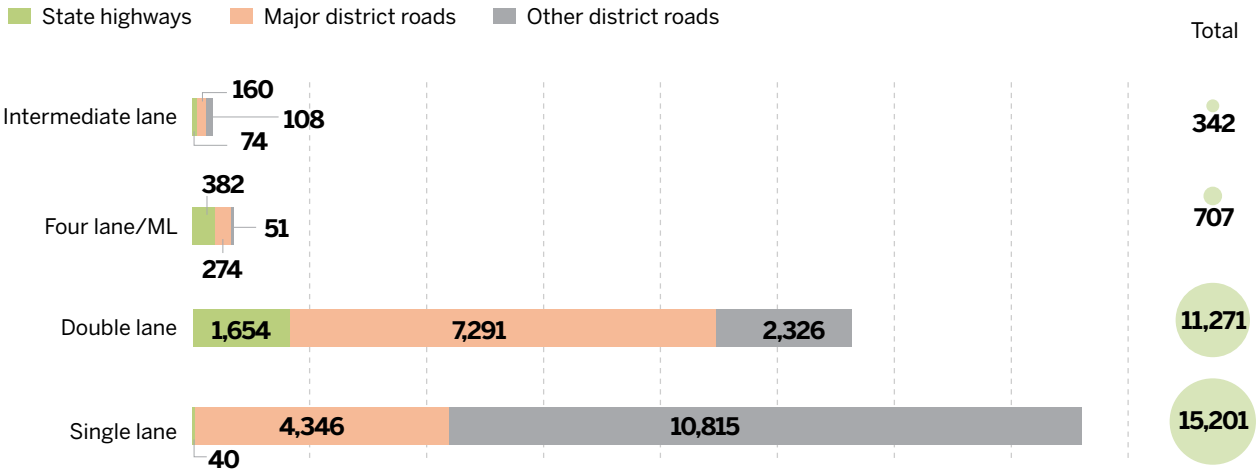
crore. Similarly, 4,375 kilometres of two-lane major district roads and state highways have been widened. The Government has also invested in the construction of new bridges and strengthening of existing ones, to improve connectivity and transport safety. So far, 308 bridges have been constructed.

PRED has built 472 roads with a length of 1,750 kilometres and 197 bridges with a total expenditure of Rs. 1,190 crore since 2014. Currently, the majority of the road network in the state is blacktop. More than 90% of all Gram Panchayats (GPs) in the state are now connected to a blacktop road. The Government has proposed to construct 340 kilometres of 'Regional Ring Road' (RRR) around the twin cities, about 30-50 kilometres away from the existing Outer Ring Road.

Figure 7.6

Road network profile

Length (in km)



Source: Transport, Roads, and Building

Under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) construction of C.C. roads have been taken up during 2020-21 and 6,000 C.C. road works have been completed.

The Government is also investing in building the infrastructure for various departments. Major building projects include the construction of:

- Mandal Praja Parishad buildings in 569 rural mandals, out of which 77 buildings have been completed; 3 Zilla Praja Parishad buildings; and 6 district office buildings
- Residence-cum-offices for Honourable MLAs at their constituency headquarters with an estimated cost of Rs 1.00 crore each for 119 Assembly Constituencies
- 120 flats for Honourable MLAs at Hyderguda with an estimated cost of Rs. 166 crore
- Buildings for the judiciary

7.3.2 Transport

The Government has invested in building Telangana's connectivity with the rest of the country and with other

countries. The number of passengers flying through the Rajiv Gandhi International Airport in Hyderabad has grown significantly over the last five years, doubling between 2014-15 (around 1 crore passengers) and 2019-20 (2.2 crore passengers). The Government is also building connectivity to ports and exim (export and import) centres through dry (inland) ports. Three locations for dry ports have been proposed in Nalgonda district (Chityala, Peda Kaparathi and Ramannapeta).

For travel within the state and within cities in the state, there are several options for citizens including railways. Nearly 76,000 private transport operators are providing various modes of transportation. In addition to regulating these private-sector options, the Government is also operating inter and intra-state bus services.

7.3.3 Telangana State Road Transport Corporation (TSRTC)

One of the most important organizations for bus connectivity in the state is the Telangana State Road Transport Corporation (TSRTC). TSRTC operates 9,779

buses in 3,422 routes, which include 11 regions, 97 depots, and 364 bus stations to various destinations in the state and in the neighbouring states of Andhra Pradesh, Maharashtra, Karnataka, Tamil Nadu and Chhattisgarh.

To improve its performance, TSRTC has implemented the following initiatives:

7.3.3.1 Improving Commercial Revenue

The corporation leased out 92 of its vacant open spaces to Hindustan Petroleum (61 locations) and Indian Oil Corporation (31 locations) to establish retail fuel outlets.

It has also started using its surplus buses for cargo services since 2019. An amount of Rs. 21 crore was realized through parcels, of which Rs 5.5 crore came through departmental parcels of the Government. The current fleet strength includes 150 closed vehicles with a luggage carrying capacity of 10 tonnes and 32 small mini cargo vehicles with a luggage carrying capacity of 4 tonnes.

7.3.3.2 Usage of Non-Conventional Energy

TSRTC has taken steps for mitigating air pollution through the use of alternative fuels such as bio-diesel and compressed natural gas (CNG). TSRTC has launched 132 CNG buses, the first of its kind in southern India. At present, biodiesel blend is being used in 35 depots and this is being extended to 50 depots.

TSRTC has included 40 electric vehicles in its fleet for the first time in the country under a Gross Cost Contract (GCC) model. The GCC model is a type of public-private-partnership where the contracting authority pays the operator on a fixed cost per km basis. TSRTC has also proposed to harness solar energy through the installation of solar photovoltaic rooftop systems in the premises of bus bhavans, bus depots, bus stations and workshops of TSRTC.

7.3.3.3 Improving Passenger Experience

TSRTC has initiated various measures to ensure the safety of its bus passengers and other road users. It has provided Vehicle Tracking and Passenger Information Systems for 4,170 special type buses to share accurate information about the departure/arrival of buses with passengers.

7.3.3.4 COVID-19 Measures

Prior to COVID-19, around 90 lakh passengers were using TSRTC services daily, but this has been drastically reduced in view of the pandemic. In order to promote safe travel for passengers, TSRTC buses are being cleaned and sanitized with sodium hypochlorite before and after every trip at terminals. All precautions for COVID-19, such as wearing masks and maintaining social distancing have been taken care of.

During the lockdown period, TSRTC operated 6,676 buses for transportation of more than 2 lakh migrant labourers to the borders of Maharashtra, Chhattisgarh and Andhra Pradesh, and also to railway stations for their onward journey to their native places, duly observing the COVID-19 standard operating procedures.

7.3.4 Hyderabad Metro Rail (HMRL)

The Government has implemented the Hyderabad Metro Rail project as a mass transit project to address the rising traffic congestion and pollution levels in Hyderabad. The network length is now 69 kms and it is one of the world's largest projects implemented in Public Private Partnership (PPP) mode. A state-of-the-art mass transit system with the latest technologies and high safety standards, the metro has become popular with the people of Hyderabad. Though the metro has only been in operation for two years, daily ridership reached around 4.5 lakh passengers before COVID-19. But for a small stretch, the entire project has been successfully completed and covers three high-density traffic corridors. The Government has

invested Rs. 2,730 crore so far, while the private sector concessionaire (L&T Metro Rail) has invested Rs. 19,307 crore (including Rs. 1,204 crore released by the Government of India under the Viability Gap Funding scheme). The project has won over 200 National and International Awards, so far.

To make Hyderabad a Global City (Viswanagaram), HMRL carried out urban rejuvenation works at and near all metro stations which have become operational. This included improving the streetscape, pedestrian facilities and safety, greenery, sidewalks, street furniture, service lanes, etc. HMRL is now planning to make an 18-kilometre EBRTS (Elevated Bus Rapid Transit System) line on certain busy routes in the city. This is expected to provide relief to the Information Technology (IT) & Information Technology Enabled Services (ITES) companies located in the western part of the city. It is also planning Multi-Level Parking Complexes (MLPCs) under PPP, in open sites belonging to different departments.

COVID-19 related challenges: The metro rail system was shut down for about six months due to the pandemic. The revenue loss was about Rs. 220 crore and the services were resumed from September 2020 onwards, with a lot of extra safety and sanitization measures both in the trains and at the stations.

7.4 Digital Infrastructure

The Government is committed to strengthening digital infrastructure. The state is on course to meet the targets set forth by the National Digital

Communications Policy 2018. This includes connecting 100% of the homes in rural areas with 100 mbps internet connections, connecting Gram Panchayats with 10 gbps, and fiberization of all cellular towers in the state by 2022.

7.4.1 T-Fiber

T-Fiber is the first state-led model to provide broadband connectivity right up to the household. This programme establishes a state-of-the-art digital network that provides affordable, high-speed broadband connectivity to all homes, enterprises and government offices. The T-Fiber network is primarily underground, piggybacking on Mission Bhagiratha ducts, and is one of the most secure, scalable and sophisticated networks in the country.

7.5 Way Forward

Recognizing the importance of infrastructure for economic growth and development, the Government has invested significantly in sustainable energy generation and distribution, assured water supply, better roads and transportation facilities across the state. Taken together, these investments have made Telangana a national leader on key infrastructure outputs such as electrification, water supply and village road access. Going forward, the Government plans to build on this success by continuing to invest in improving and expanding infrastructure, with a focus on increasing both the reach and quality of infrastructure in the state.



CHAPTER 8

HEALTH



Key Highlights

Health is the foundation for well-being and prosperity of societies. As COVID-19 has demonstrated, a robust public health system is crucial for any society to sustain. Over the last year, the Government has been combating COVID-19 while investing in health infrastructure and services to improve health outcomes in the state. Key highlights include:

- In response to COVID-19, the Government rolled out several initiatives to mitigate the spread of the virus and to treat patients. This included implementing a 'Test-Track-Treat' strategy for early detection, hiring more healthcare personnel, building dedicated COVID-19 infrastructure and planning for the vaccination for all citizens.
- The Government continues to strengthen health infrastructure in the state to develop capable and well-coordinated health agencies, qualified health workforce and modern data and information systems.
- To provide health care services to the poor and the vulnerable, the Government is implementing flagship schemes such as Aarogyasri and Basti Dawakhana.
- To reduce the disease burden, the Government has focused on implementing national programmes such as the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke, and the National Tobacco Control Programme.
- The Government is committed to protect the quality of healthcare and invest in improving palliative and elderly care in the state.



8.1 Introduction

Health is essential for the survival of human beings and the all-round development of society. The Government's goal is to create universal access to quality healthcare services in the state. For this, the Government is undertaking various programmes in reproductive and child health services; seasonal disease prevention activities; disease control interventions; rationalizing and strengthening human resources; infrastructure development; training and capacity building; improving effective and efficient monitoring; and technical support systems. These programmes have become all the more important because of the threats raised by COVID-19. The Government acted swiftly and comprehensively to minimize the spread of the virus in the state, without adversely impacting other health services. As per NITI Aayog's Sustainable Development Goals India Index 2019-20, the state was a 'front runner' on SDG 3 (ensure healthy lives and promote well-being for all at all ages).

8.2 COVID-19

The emergence of the COVID-19 pandemic in 2020 created unprecedented healthcare challenges for the

state. Given the ease with which the virus spreads and the potentially severe symptoms, the Government had to take prompt action, starting with the lockdown, and implement several multi-pronged initiatives. In order to contain the pandemic, health officials and medical staff worked round-the-clock to roll out several initiatives to ensure quality healthcare services, strengthened health infrastructure and re-allocated resources to treat the rising COVID-19 cases. The Government also incorporated an integrated computerized clinical information system (e-Hospital Management System) to improve hospital administration and patient healthcare services.

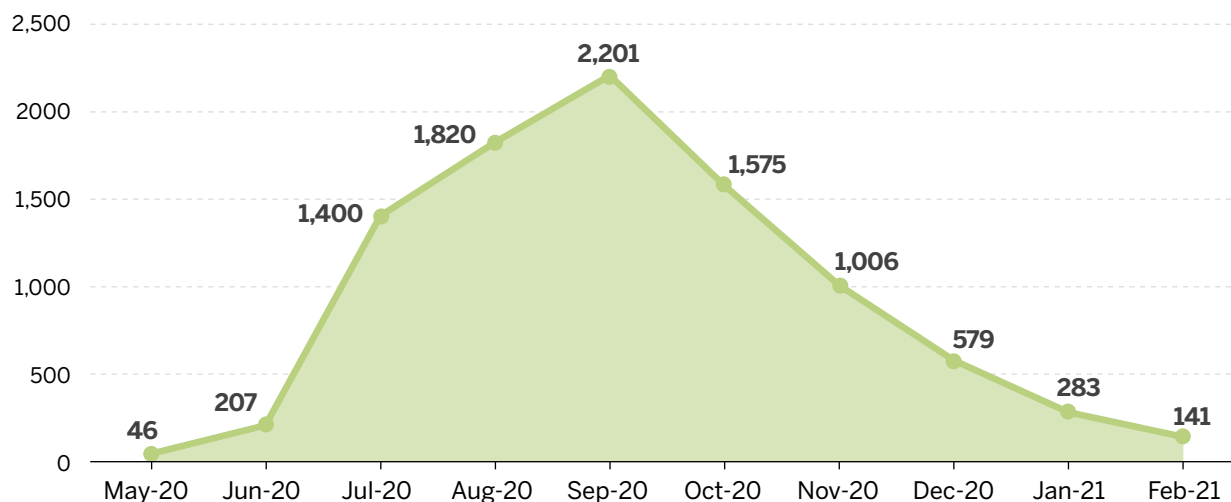
In parallel, the Government increased awareness about COVID-19 and ensured that daily essential services like ration shops (under PDS), groceries, pharmaceuticals, banks, delivery of essential goods, power supply, etc. were provided without hindrance. With the combined effort of healthcare professionals, last-mile workers, citizens and the Government officials, the state was able to contain the spread and minimize the infection and death rates.

8.2.1 COVID-19 Cases

As on 28th February 2021, there are 1,902 active cases,

Figure 8.1**No. of confirmed COVID-19 cases (7-day moving Average)**

The number of confirmed COVID-19 cases has been declining significantly over the last 5 months



Source: mygov.in/covid-19

Table 8.1**COVID-19 situation update (as of 28 February 2021)**

	Telangana	India
Total cases	2,98,923	1,11,12,056
Deaths	1,634 (0.54%)	1,57,195 (1.4%)
Recovery	2,95,387 (98.8%)	1,07,84,568 (97.1%)
Active cases	1,902 (0.64%)	1,65,715 (1.5%)
Samples tested per million population	2,34,310	1,57,143
Positivity rate	3.40%	5.10%

Source: Department of Health, Medical and Family Welfare; mygov.in/covid-19

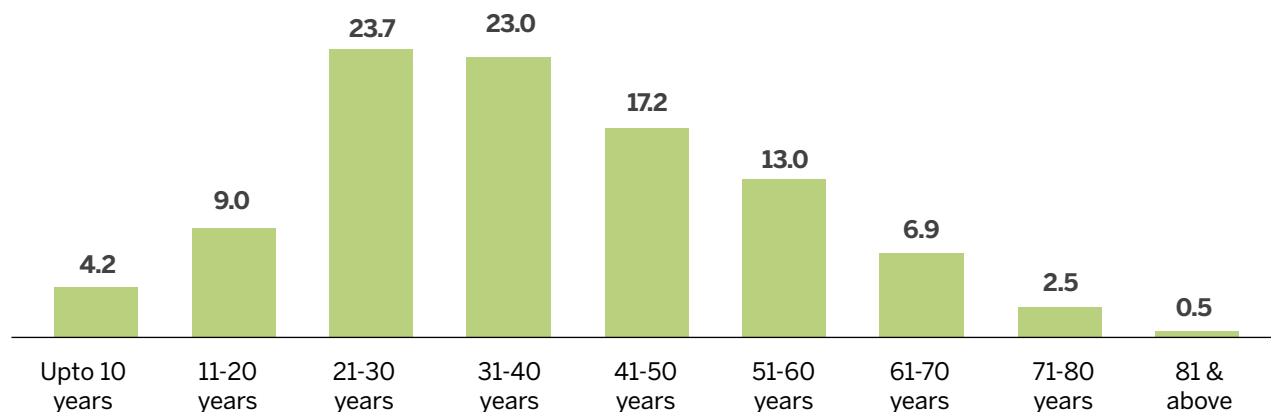
of which 42% are in home/institutional isolation. The state is performing better than the national average with a high recovery rate and low rate of active cases (Table 8.1). Up until February, of the 2,98,923 positive cases, 30% were symptomatic, 46% were from the 21-40 age group and 60% were male; and of the total deaths (1,634), 45% have been due COVID-19 and remaining 55% deaths are due to comorbidities.

Testing for COVID-19 is one of the most critical tools to understand the spread of the pandemic. The Government made tremendous efforts in strengthening testing capacity in the state; increasing the total number of tests substantially to 87.2 lakhs by February 2021. The daily testing in the test has been consistently above the testing target of 5,600 tests per day as per World Health Organization (WHO) benchmarks.

Figure 8.2

Age-wise positive COVID-19 cases (%)

Majority of COVID-19 cases are from the 21-40 age group (as of February 28th 2021)



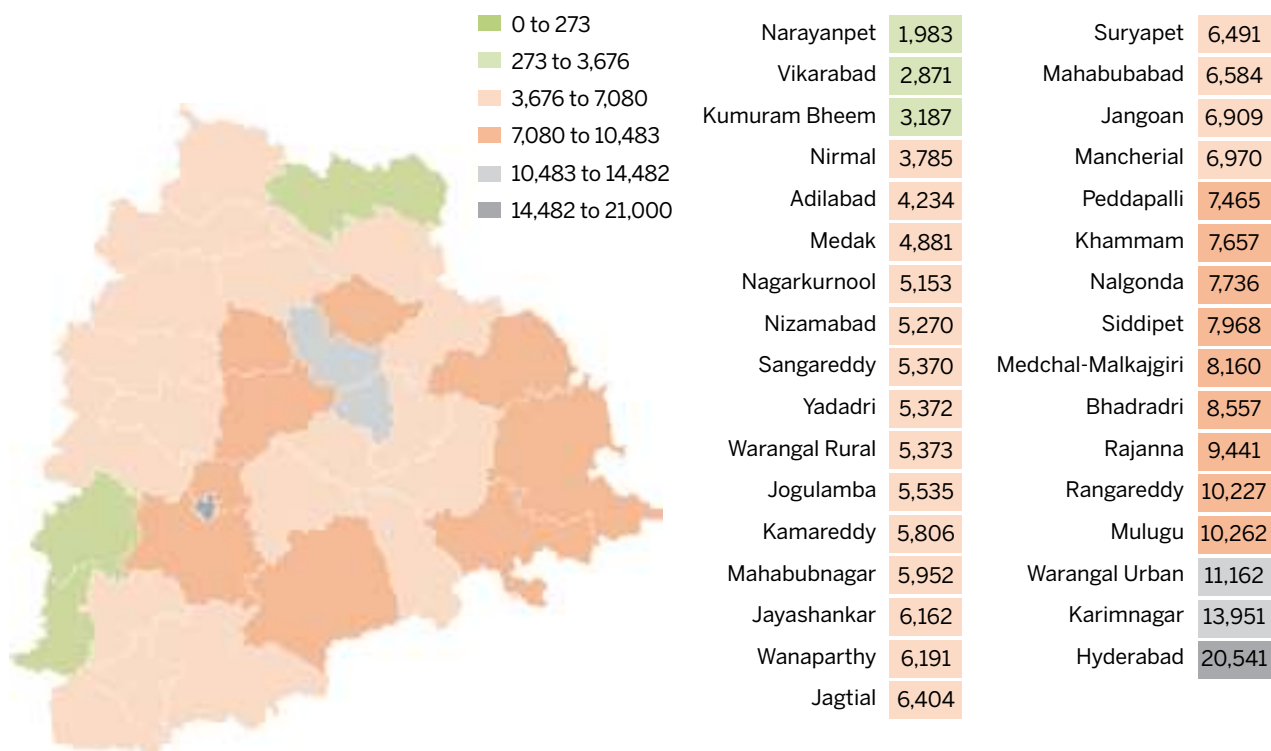
Source: Department of Health, Medical and Family Welfare

Figure 8.3

Cumulative COVID-19 positive cases (per million)

Confirmed COVID-19 cases per million (as of February 28th 2021)

State average: 7,080



Note: Districts arranged in tabular form in ascending order of cases per million

Source: Department of Health, Medical and Family Welfare

8.2.2 COVID-19 Related Initiatives

The Government followed the 'Test-Track-Treat' strategy for early detection and containment of the COVID-19 outbreaks and strengthened its health infrastructure to accommodate more patients. There was an increase in manpower recruitment, number of oxygen-supported beds and ICU beds and ventilators, and the state procured masks, sanitizers, PPE kits and other surgical consumables. The Government worked in close coordination with all the airport health organizations and initiated communication with different state surveillance units and the immigration bureau to track and screen individuals (especially foreign returns) for COVID-19 symptoms. Extensive Information, Education and Communication (IEC) activities were designed to spread awareness and circulate information. This was done via posters, phone ringtones, the Aarogya Setu App and feedback calls to COVID affected families.

8.2.2.1 Measures Taken to Provide Support and Redressal

All COVID-19 patients undergoing treatment in Government hospitals were provided with quality healthcare services and nutritious food. A 3-member task force was formed at the state-level to ensure that COVID-19 treatment and safety protocols were adhered to by private hospitals.

The Government also took strong initiatives to ensure that essential health services are accessible to all,

especially high-risk groups, such as senior citizens and citizens with existing medical complications, such as cardiovascular diseases, diabetes, chronic respiratory diseases and cancers. The initiatives ensured free doorstep delivery of drugs, tele-consultation for patients, implementation of sub-centre level outreach camps for ante-natal check-ups, etc. For example, the India Hypertension Control Initiative (IHCI) team conducted drug delivery, facilitated by Auxiliary Nurse Midwives (ANMs), to approximately 52% of total patients during April and May 2020. The Government also recognized that pandemic led to widespread anxiety and loneliness among citizens across age-groups. Having understood the threats to mental well-being, the Government, under the National Mental Health Programme (NMHP), offered mental health counselling through the 108-Helpline.

8.2.2.2 Measures Taken to Strengthen Health Infrastructure During the Pandemic

COVID-19 cases were treated in all major hospitals in the state. Gandhi Hospital, Secunderabad was designated as the nodal hospital for COVID-19 and treated thousands of patients. The existing buildings in the Gachibowli Sports Stadium were rapidly converted into a fully functional COVID-19 hospital, with 1,224 bed capacity, and was named the 'Telangana Institute of Medical Sciences' (TIMS).

The state also developed a dedicated website (<https://covid19.telangana.gov.in/>) with the mission hashtag #TelanganaFightsCorona to provide real-time updates

Figure 8.4

Hospitals allocated exclusively for COVID-19 (as of February 2021)

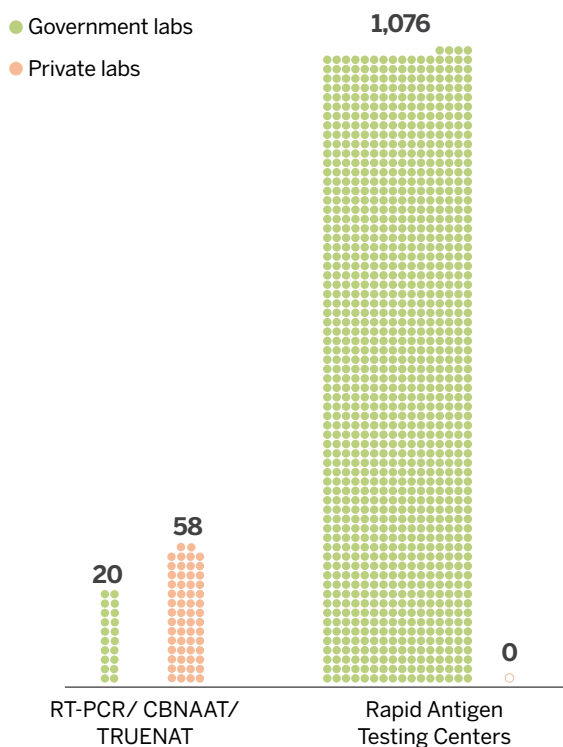
	Number of hospitals	Regular beds	Oxygen beds*	ICU beds**	Total beds
Government	62	1,567	5,264	1,746	8,577
Private	216	2,004	3,107	2,527	7,638
Total	278	3,569	8,368	4,273	16,210

*Oxygen Beds are beds equipped with oxygen cylinder; **ICU Beds are beds equipped with ventilator/CPAP machine

Source: Department of Health, Medical and Family Welfare

Figure 8.5

Testing facilities (as of February 2021)



Source: Department of Health, Medical and Family Welfare

on total cases, recoveries, deaths, testing facilities, information on preventive care, helpline numbers and COVID-related government orders.

As of February 2021, 278 hospitals have been

designated for COVID-19 treatment (Figure 8.4). In addition, there are 88 COVID-19 care centres with 8,114 total number of beds. The Government also increased the testing facilities and the number of rapid antigen testing centers (Figure 8.5).

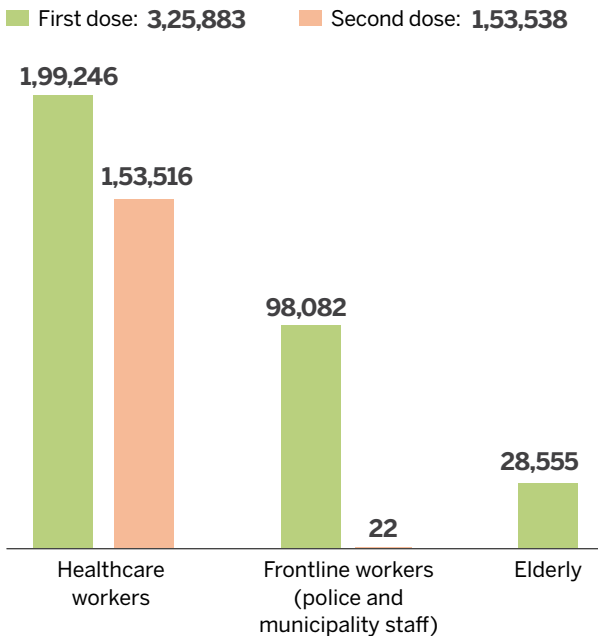
8.2.3 Other Health Sector Challenges During COVID-19

COVID-19 also affected other aspects of the Government's healthcare services. Due to the apprehensions of COVID-19, few people approached the healthcare facilities and there were issues related to infrastructure, human resources and logistics that discouraged frontline workers. During the initial months, there was a shortage of manpower to carry out the tests, conduct contact tracing, collect data and screen immigrants. Moreover, due to re-allocation of resources and personnel, frontline workers were prevented from undertaking their regular duties. For example, the entire ASHA workforce was involved in the COVID-19 duty which impacted field visits for antenatal checkups, immunization, non-communicable diseases, etc. Therefore, there was a drastic drop in antenatal registration of pregnant women and essential services; for example, monthly drug supply for NCD (Non-Communicable Diseases) patients were adversely affected. However, the Government took timely decisions to combat these challenges and has been consistently working towards improving healthcare capacity and resources.

Figure 8.6

Breakup of COVID-19 vaccinations provided

Number of beneficiaries (as of 28 February 2021)



Source: Department of Health, Medical and Family Welfare

8.2.4 Future Plans for Containing COVID-19

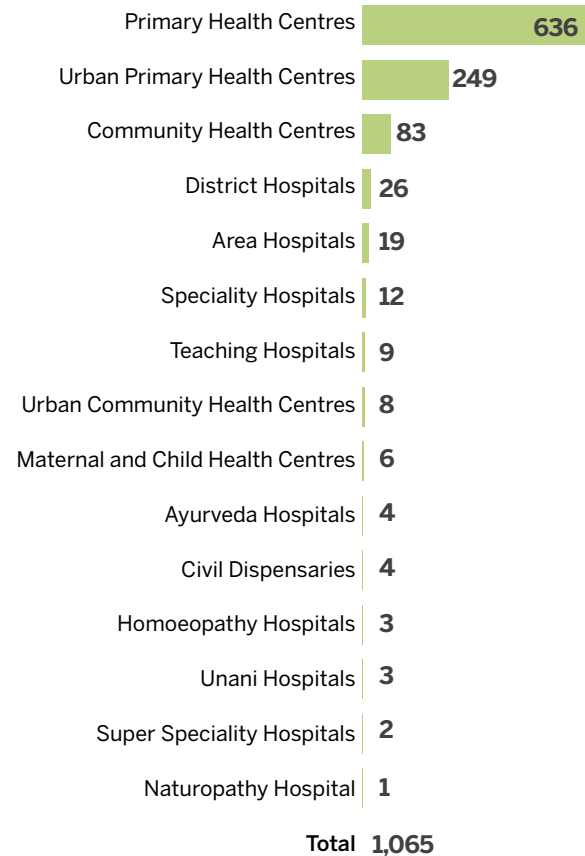
Though the spread of COVID-19 has slowed, the Government remains vigilant of spikes in cases and new strains. For instance, the health surveillance machinery went into a high alert mode after the news of a more infectious strain of COVID-19 spreading across the United Kingdom. Immediately after, the Government of India decided to ban flights from the UK, the Government initiated necessary measures such as conducting RT-PCR tests on all passengers who were already enroute to the state from the UK, isolation of those tested positive, and mandatory institutional quarantine.

The Government is now focused on speedy and efficient vaccine rollout. In addition to vaccinating healthcare workers and frontline workers, the

Figure 8.7

Health Infrastructure

Number of hospitals and health centres



Source: Department of Health, Medical and Family Welfare

Government is vaccinating the elderly (those aged above 60) and individuals aged between 45 and 59 with comorbidities, as per the guidelines issued by the Government of India. Taken together, 4.79 lakh vaccines have been administered in the state (Figure 8.6 gives the breakup).

8.3 Health Infrastructure

The Government continues to focus on strengthening infrastructure to develop capable and well-coordinated health agencies, qualified health workforce and modern data and information systems. There are 83 government hospitals in the state and 982 health centres (Figure 8.7).

8.3.1 Major Health Institutions in the State

All India Institute of Medical Sciences (AIIMS), Telangana

The Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) was announced in 2003 with the objectives of correcting regional imbalances in the availability of affordable and reliable tertiary healthcare services, and also to augment facilities for quality medical education in the country. AIIMS, Bibinagar is one of the apex healthcare institutes established under “Phase-VII” of PMSSY and the first batch of MBBS course started in 2019, comprising 50 students. Under the provisions of the AIIMS Act, these new AIIMS are called Institutes of National Importance and are to function as autonomous institutions under the Ministry of Health and Family Welfare, Government of India. This institute has been established with a vision to emerge as a leading global healthcare institute offering quality medical education in diversified fields, providing healthcare, fostering scientific research opportunities, and inculcating in them ethical and moral values for sustainable community development.

Telangana Institute of Medical Sciences (TIMS)

TIMS is a new hospital created in response to the COVID-19 pandemic. The hospital was converted from the existing buildings in the Gachibowli Sports Stadium and came into existence on 25 April 2020. It was initially developed as an exclusive COVID-19 hospital, but will eventually be developed into a multi-speciality hospital-cum-premier medical college. Recruitment of doctors, nurses and other healthcare professionals has been completed and the hospital is equipped with 1,224 beds, 1,000 oxygen supply facilities and mechanical ventilators for 50 beds.

Nizam’s Institute of Medical Sciences (NIMS)

Nizam’s Institute of Medical Sciences (NIMS) was

established with the primary objective of creating a centre of excellence for providing medical care and educational and research facilities of high order and to start postgraduate and paramedical courses. There are 34 departments which include super specialties and broad specialties. In 2019, the institute performed 24,638 surgeries, out of which 11,310 were major and emergency surgeries, and 105 kidney transplants.

Telangana Vaidya Vidhana Parishad (TVVP)

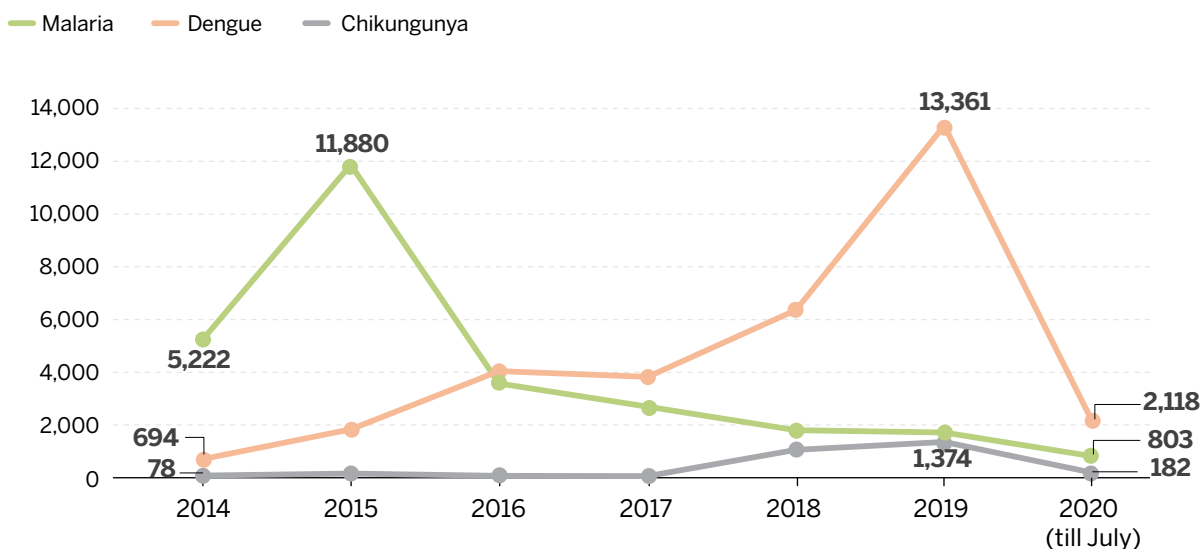
Telangana Vaidya Vidhana Parishad (TVVP) provides intermediary healthcare services which are not provided in Primary Healthcare Centres and Tertiary Healthcare Centres. There are 108 TVVP hospitals that cater to maternity and child health services, general medicine, general surgery, ophthalmology, paediatrics, etc. These hospitals have been provided with the latest equipment, including digital X-ray plants, ultrasound scanners, and anaesthesia machines. Intensive care units are established in 20 TVVP hospitals and 150-bedded Mother and Child Hospitals (MCHs) are sanctioned in eight health facilities, of which six MCHs are functioning in the district hospitals (DHs) in Karimnagar, Khammam, Nalgonda and Sangareddy, and area hospitals (AHs) in Jangaon and Siddipet.

Mehdi Nawaj Jung (MNJ) Institute of Oncology

MNJ Institute of Oncology is a 450-bedded apex hospital, with 10,000 new patient registrations per year, specialized in teaching and treatment of cancer. This is the only referral hospital in the state offering free comprehensive cancer care to the poor patients of the state and neighbouring states of Andhra Pradesh, Maharashtra, Madhya Pradesh, Karnataka and Odisha. Every year, more than 1.5 lakh cancer related diagnostic tests are being conducted, and the hospital performs about 2,500 major and minor surgeries. Radiotherapy and chemotherapy are performed on 400 patients and 350 patients every day, respectively.

Figure 8.8

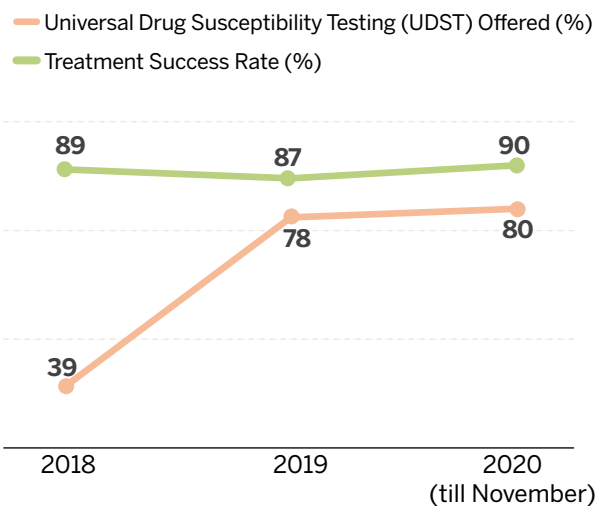
Vector borne diseases: current status



Source: Department of Health, Medical and Family Welfare

Figure 8.9

TB Patient coverage



Source: Department of Health, Medical and Family Welfare

8.4 Non-Communicable and Communicable Diseases

8.4.1 Status of Diseases

The primary objective of the Government is to reduce the state's disease burden and at present, non-

communicable diseases are major causes of deaths in the state. According to Global Disease Burden India estimates, prepared in coordination with the Indian Council of Medical Research, ischemic heart disease caused 21% of total deaths per lakh population in the state in 2019, followed by chronic obstructive lung disease (8.1%) and stroke (7.7%).

Moreover, the state has also made efforts to curb communicable diseases that come from mosquito-borne diseases (malaria, dengue and chikungunya) and tuberculosis (TB). In the past year, the Government has undertaken various steps like conducting weekly anti-larval operations, indoor residential spray (IRS), distributed mosquito nets and spreading awareness about vector-borne diseases to alleviate the spread of communicable diseases.

The state is following the "End TB Strategy" to make the state TB-Free with zero deaths, disease and poverty due to TB. The treatment success rate for TB in 2020 was 89%. (Figure 8.9)

8.4.2 Key Programmes to Reduce Disease Burden

To reduce the burden of both communicable and non-communicable diseases, the Government has been implementing various programmes.

National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)

The NPCDCS works towards early diagnosis and treatment of hypertension, diabetes, and oral, cervical and breast cancers. The aim is to screen all the individuals of more than 30 years of age, track the follow up of hypertension and diabetic patients, and subsequently, reduce mortality due to cancer by making treatment more accessible and affordable. At present, 7 District NCD clinics and 47 CHC NCD clinics (Community Health Centre) are functional under NPCDCS.

The state has also developed an NCD App to capture screening, treatment and follow-up details of patients. So far, 79% of the 1.4 crore targeted population (aged 30 and above) have been screened, out of which 12% and 5.5% have been diagnosed and put on treatment for hypertension and diabetes, respectively. Despite the COVID-19 pandemic, upto 53% of those diagnosed with hypertension and diabetes were given treatment (as of August 2020).

National Mental Health Programme

The programme aims to provide sustainable basic mental health services to the community through early detection and treatment of patients. The programme was initiated in June 2019 in 59 selected PHCs from 9 districts on a pilot basis. As of October 2020, 74,668 suspected cases have been diagnosed and 18% of them have been put on treatment.

National Tobacco Control Programme (NTCP)

The programme creates awareness about the harmful effects of tobacco consumption and ensures effective

implementation of the provisions under the Cigarettes and Other Tobacco Products Act, 2003 (COTPA). The programme was implemented in the state in all the districts. District Level Coordination Committees (DLCCs) and enforcement squads were formed in 27 districts, and the remaining districts are yet to form committees. Two rounds of training were imparted to the law enforcers on implementation of the Act.

As of June 2020, 20 districts have Tobacco Cessation Centres and a total of 177 Centres are providing cessation services other than those covered under NTCP (both at PHC and SC level). Between October 2019 and June 2020, services have been availed by 3,855 people.

AIDS Control Programme

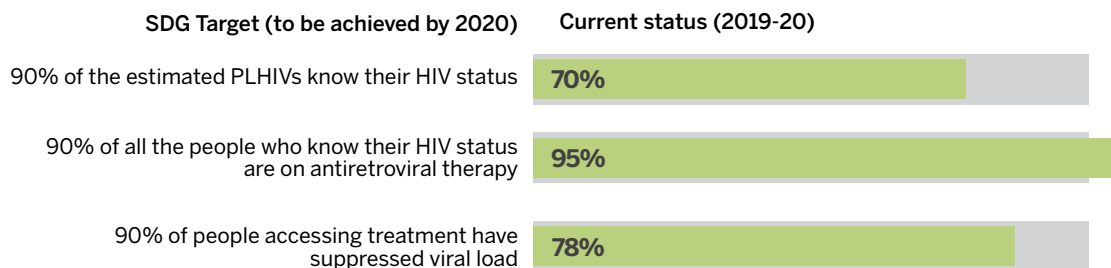
The Telangana State AIDS Control Society has been striving towards achieving the United Nations' Sustainable Development Goal of 90-90-90 (Figure 8.10) which states that 90% of estimated People Living with HIV (PLHIV) know their status; of whom 90% are on treatment; of whom 90% have suppressed the viral load. The state has witnessed a 52.1% decline in new HIV infections in the previous decade, as per the HIV Sentinel Surveillance.

Basti Dawakhanas

Launched in April 2018, Basti Dawakhana is an initiative of the Government under the National Urban Health Mission to offer quality health services to the urban poor in their vicinity. These centres provide 53 different kinds of free services and nearly 5,000 types of tests. This includes outpatient consultation, medicines, basic lab diagnosis, antenatal/postnatal care, screening for non-communicable diseases such as blood pressure and diabetes, and tests for malaria and dengue. Each Basti Dawakhana serves nearly 5,000-10,000 urban residents. Currently, 224 Basti Dawakhanas are providing services across four districts: Hyderabad (135 centres), Medchal-Malkajgiri (52), Sangareddy (3) and Rangareddy (34). Since the inception of the scheme, nearly 43.6 lakh out-patients have been covered and 1.18 lakh diagnostic tests have been conducted.

Figure 8.10

Telangana's performance on achieving 90-90-90 Sustainable Development Goal (SDG)



Source: Department of Health, Medical and Family Welfare

Aarogyasri Scheme

Aarogyasri Scheme is a unique Government-sponsored health insurance scheme being implemented by Aarogyasri Health Care Trust in the state. The scheme is a unique, tailor-made, public-private partnership model to serve the health needs of poor patients and provide end-to-end cashless medical services for identified diseases through a network of Government and private hospitals. The scheme provides cashless quality care to 77 lakh BPL households. Each family is eligible for health coverage of worth upto Rs. 2 lakh every year and this may go up to Rs. 10 lakh for high-end procedures. The scheme covers 949 listed therapies for identified diseases and includes a one-year follow-up package for 126 listed secondary and tertiary care procedures.

Since the formation of the state, under Aarogyasri, around 30 lakh out-patients and 19.5 lakh in-patients have been treated with an amount of Rs. 4,758 crore. During 2020-21, an amount of Rs. 577 crore was spent on conducting nearly 2.5 lakh therapies, out of which 1.6 lakh were in private hospitals and 83,113 were in government hospitals.

The Government has empaneled 42 Dialysis Centres in Government Hospitals under Public Private Partnership (PPP) models to provide dialysis treatment to the patients under the Scheme.

Insurance and Medical Services

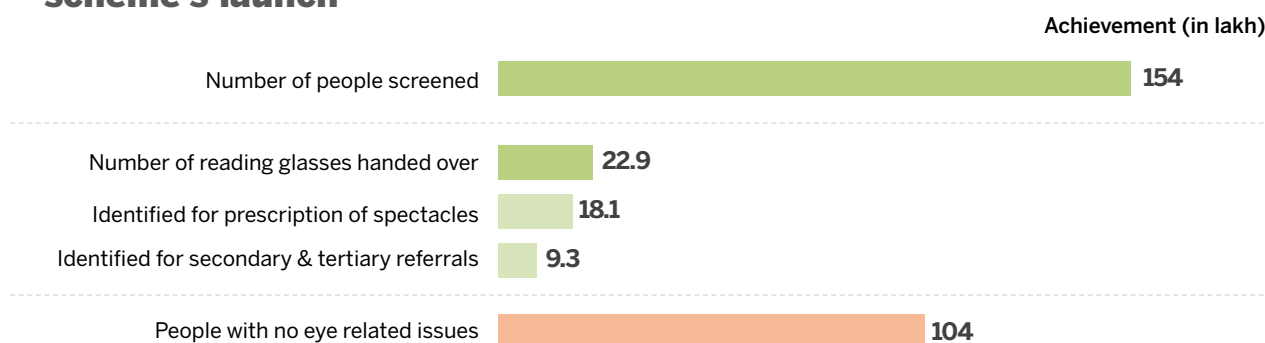
The objective of the Employees State Insurance (ESI) Scheme is to provide financial relief in cases of sickness, maternity or disablement, and to provide medical benefits to employees of factories and establishments and their dependents. Besides medical care, insured employees and their dependants are also entitled to a variety of cash benefits to compensate for the loss of their earning capacity due to sickness and temporary or permanent disablement.

This is a contributory scheme governed by the ESI Act 1948. The employer and the employee's contribution is 4% and 1% of total wages respectively. The Government provides medical care to the ESI beneficiaries under the Act. The scheme is applicable to employees earning up to a wage limit of Rs. 21,000 per month and Rs. 25,000 per month for employees with disabilities. This scheme is applicable to non-seasonal factories employing ten or more persons, as well as shops, hotels, restaurants, private medical and educational institutions, cinemas, and newspaper establishments.

The Insurance and Medical Services Department is providing medical care to around 17 lakh insured persons and their family members (totalling to around 70 lakh people). To implement the scheme, both the state government and ESI corporation provide a set of services to the beneficiaries.

Figure 8.11

Achievements under Kanti Velugu Programme since scheme's launch



Source: Department of Health, Medical and Family Welfare

Kanti Velugu

The Kanti Velugu Programme was launched in 2018 to address a large percentage of avoidable vision impairment among the population of the state, with an aim to build “Avoidable Blindness-free Telangana”. More than 800 teams conducted eye-screening camps with self-contained manpower, equipment, medicines, reading glasses, etc (Figure 8.11).

AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy)

The Government, along with the National AYUSH Mission (NAM), is encouraging the use of the AYUSH system of medicine. Presently, there are 860 dispensaries, hospitals and institutions working under the Department of AYUSH. Telangana is the only state which has pharmacies in the three streams of ayurveda, unani and homoeopathy. Two AYUSH Wellness Centres are functioning each in Hyderabad and Warangal districts; and new AYUSH Hospitals are proposed in Vikarabad, Siddipet and Jayashankar districts.

Palliative and Elderly Care

Palliative care is an approach that improves the quality of life of patients (adults and children) and their

families who are facing problems associated with life-threatening illness. It prevents and relieves suffering through the early identification, correct assessment and treatment of pain and other problems, whether physical, psycho-social or spiritual. Patients with end-stage diseases like cancers, organ failures and paralysis need proper end of life care. The state has rolled out a comprehensive palliative healthcare programme with three features: home-based care, outpatient care and in-patient care. Eight palliative healthcare centres are established for in-patient care and home care is being provided in 110 sub-centre Health and Wellness Centres.

8.5 Way Forward

Over the last year, the Government stepped up to the challenge of containing the spread of COVID-19 while staying committed to achieve the goal of ‘Health for All’. In the next year, recognizing the importance of a resilient health sector and better health outcomes for the state, the Government will continue to combat the spread of COVID-19 and invest in health-related infrastructure, services and staff to ensure high-quality healthcare access to all individuals.

CHAPTER 9

MATHA SISU SAMRAKSHANA (MOTHER & CHILD CARE)



Key Highlights

"Thalli biddala kshemame - samaja samkshemam"

The welfare of the mother and child is the welfare of the society. Recognizing this, the Government of Telangana is committed to improving maternal and child health and nutrition outcomes. To do this, the Government is implementing several programmes. Key highlights include:

- The KCR Kit and Amma Odi programmes have helped increase institutional deliveries and reduce the maternal mortality ratio in the state.
- The state's nutrition outcomes are in line with other states in the country but still have scope for improvement. Recognizing this, the Government is investing in improving nutrition services provided by the ICDS, through programmes like Arogya Lakshmi.
- The Government is also leveraging technology to improve nutrition-related service delivery.
- To mitigate the impact of COVID-19 on maternal and child care, the Government responded quickly to bring innovative changes in existing policies and channeled resources towards vulnerable sections in the community, through initiatives such as Take Home Rations, COVID-19 Emergency Kits and T-Sat Vidya.



9.1 Introduction

Research shows that health and nutritional deficiencies during early childhood can have adverse impacts on health and quality of life far beyond the first three years of life. This makes investing in improving maternal health and nutrition outcomes paramount to advancing long term welfare and prosperity. The departments of Women and Child Development (WCD) and Health, Medical and Family Welfare (HM&FW) are striving hard to improve maternal and child health outcomes.

9.1.1 COVID-19: Key Initiatives for Mother and Child Care

COVID-19 impacted the functioning of the Government across states. The lockdown shifted priorities, demanding quick and innovative changes in existing interventions to ensure they were running smoothly, while maintaining minimum social exposure. The Government has taken various steps to ensure that COVID-19 does not interrupt the distribution of beneficiary provisions.

At the same time, the Government took initiatives to meet the needs created by new challenges for

vulnerable populations, such as migrant women and children in state homes. In response to COVID-19, the Government brought in necessary changes to schemes, such as Arogya Lakshmi, to minimize beneficiary exposure. Other key activities undertaken by the Government during the pandemic were:

- **Take Home Ration:** Under the Arogya Lakshmi Programme in the state, the Government initiated Take Home Ration (THR) that provided supplementary nutrition food (rice, dal, oil, eggs, milk, balamrutham and murukulu) instead of spot feeding at Anganwadi centres (AWCs) as a measure to prevent the spread of COVID-19.
- **COVID-19 awareness:** One of the focus areas of the Village Health, Sanitation and Nutrition Day (VHSNDs) during the COVID-19 pandemic was raising awareness about the pandemic and the preventive measures that can be taken. The Government promoted the adoption of key safe practices, such as regular hand washing, sanitation, social distancing, wearing masks, etc.
- **Supply of sanitary napkins:** The Government supplied 2 lakh sanitary napkins to women residing in institutions of the state and to migrant workers

during the pandemic.

- **Emergency kits:** The Government also supplied emergency kits for migrant women and children with around 1,500 kits provided to women and children travelling in Shramik trains.
- **Construction of temporary she-toilets:** Temporary toilets for women were constructed in big congregations of migrant labourers in Medchal district by the district administration.
- **T-Sat Vidya:** Owing to the closure of AWCs, the Government has shifted to remote education and implemented 'Preschool Education - Digital Activities', an hour-long daily programme on T-Sat-Vidya channel. The programme caters to parents and pre-school children.
- **Camps for antenatal check-up:** Sub-centre level

outreach camps were implemented for antenatal check-ups, wherein the PHC medical officer visits the designated sub-centre for antenatal check ups twice a week. The designated sub-centre is accessible by 2-3 sub-centres surrounding it.

- **Mahua laddu:** As a local alternative to the fortified foods provided at AWCs, the Government provided 'mahua laddus' and bananas to pregnant and lactating women in Adilabad district during the COVID-19 lockdown.

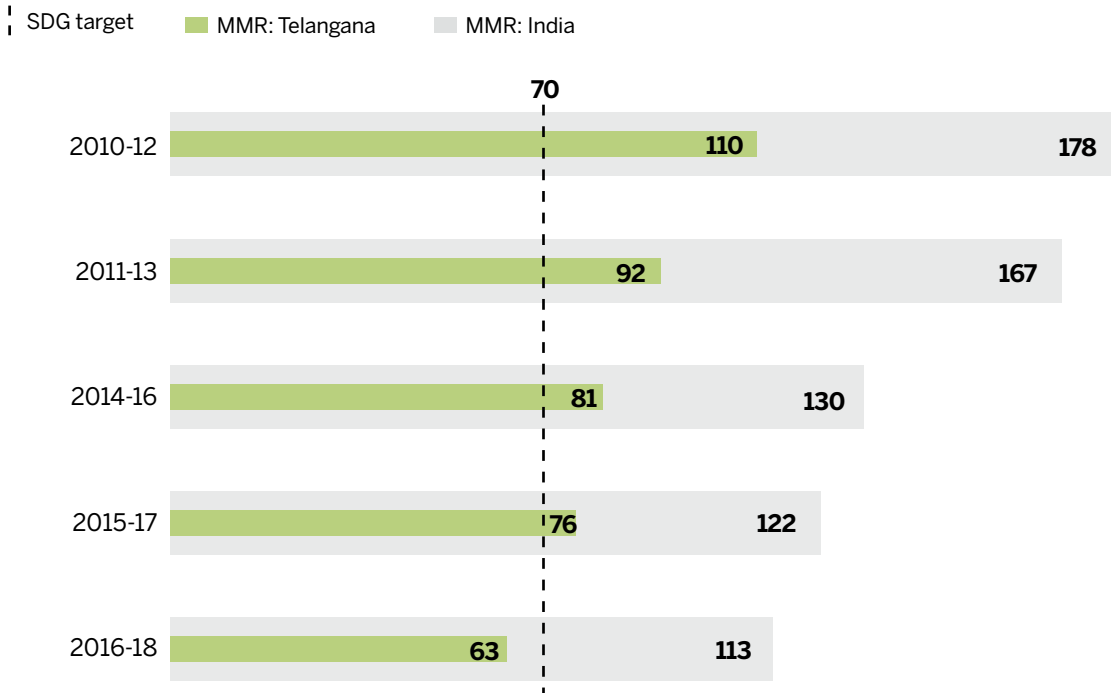
9.2 Maternal Health

Maternal health refers to the health of women during pregnancy, childbirth and the postnatal period. At each stage, adequate care needs to be given to ensure women and their babies reach their full potential of health and well-being. Recognising this,

Figure 9.1

Maternal Mortality Ratio- India and Telangana (2010-18)

Maternal Mortality Ratio in Telangana has decreased significantly in recent years



Source: Sample Registration System

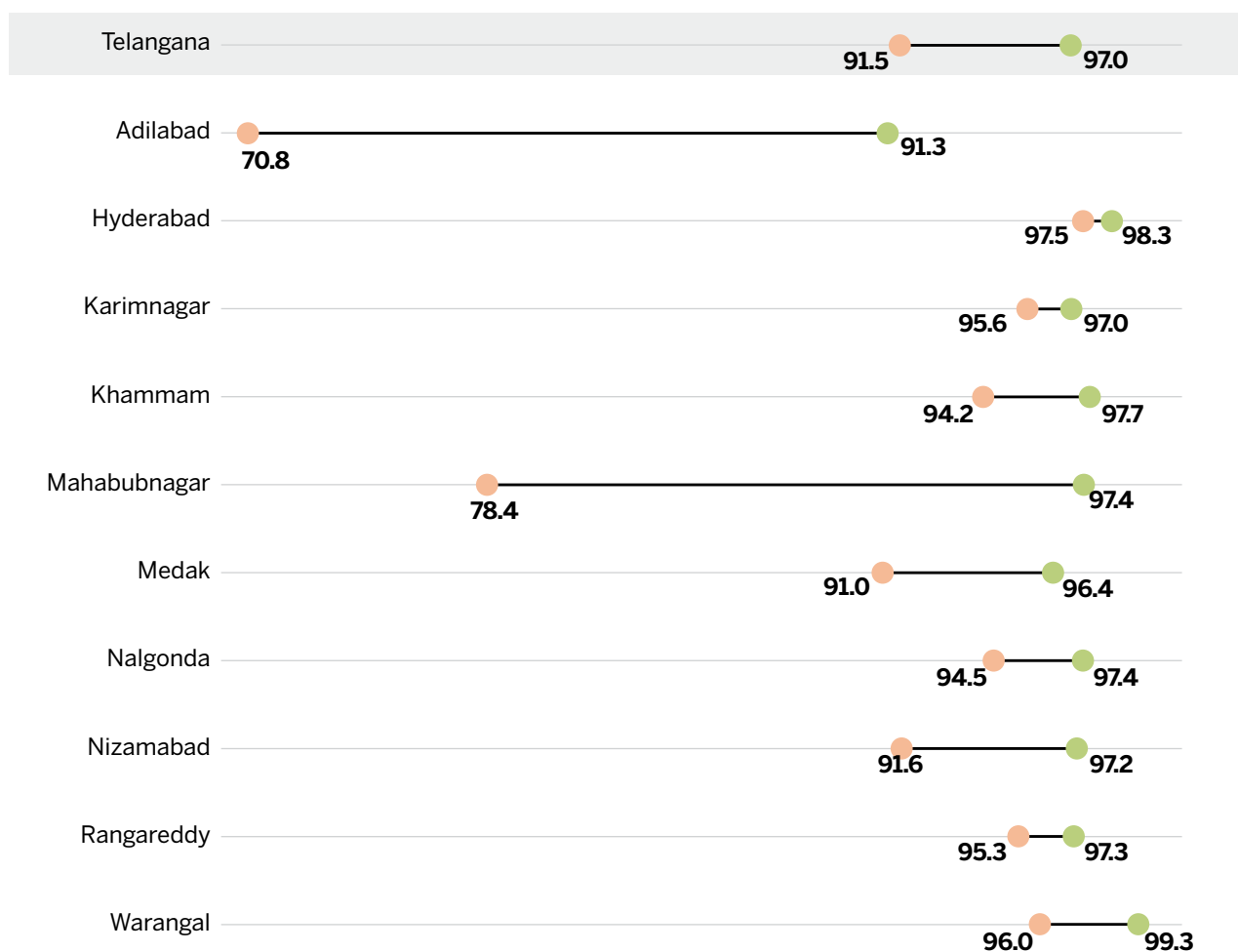
Figure 9.2

Telangana and erstwhile districts comparison between 2015-16 and 2019-20 for institutional deliveries

Institutional deliveries have increased for all districts in the last five years

● NFHS-4 (2015-16) ● NFHS-5 (2019-20)

Institutional deliveries as % of total deliveries



Districts arranged in alphabetical order

Note: For NFHS-5 estimates, new to old district mapping is used to compute weighted averages for erstwhile districts using district population as weights.

Source: National Family Health Survey-5

the Government is closely tracking and implementing several schemes to improve maternal health outcomes in the state.

9.2.1 Maternal Health Outcomes

The state has shown progress on important

maternal health outcomes. According to the Sample Registration Survey, a large-scale demographic survey conducted by the Government of India, the state's maternal mortality ratio has been declining over the past decade. In 2016-18, the maternal mortality ratio was 63 per lakh live births, which is below the SDG target of 70 and has been consistently below the

national average of 113 (Figure 9.1).

Moreover, there has been an increase in the percentage of institutional deliveries in the state. According to the National Family Health Survey-5¹ (NFHS-5), a large-scale representative survey conducted with support from the Government of India, 97% of deliveries in the state in 2019-20 were institutional deliveries, a six percentage point increase from 2015-16. Within the state, previously underperforming districts (Adilabad and Mahabubnagar) have shown the largest improvements (Figure 9.2). Around half of all deliveries in the state (49%) took place in public facilities. This improvement can largely be attributed to the increase in beneficiaries under the KCR Kit programme.

9.2.2 KCR Kit and Amma Odi: Programmes to Improve Maternal Health Outcomes

Common direct causes of maternal death include

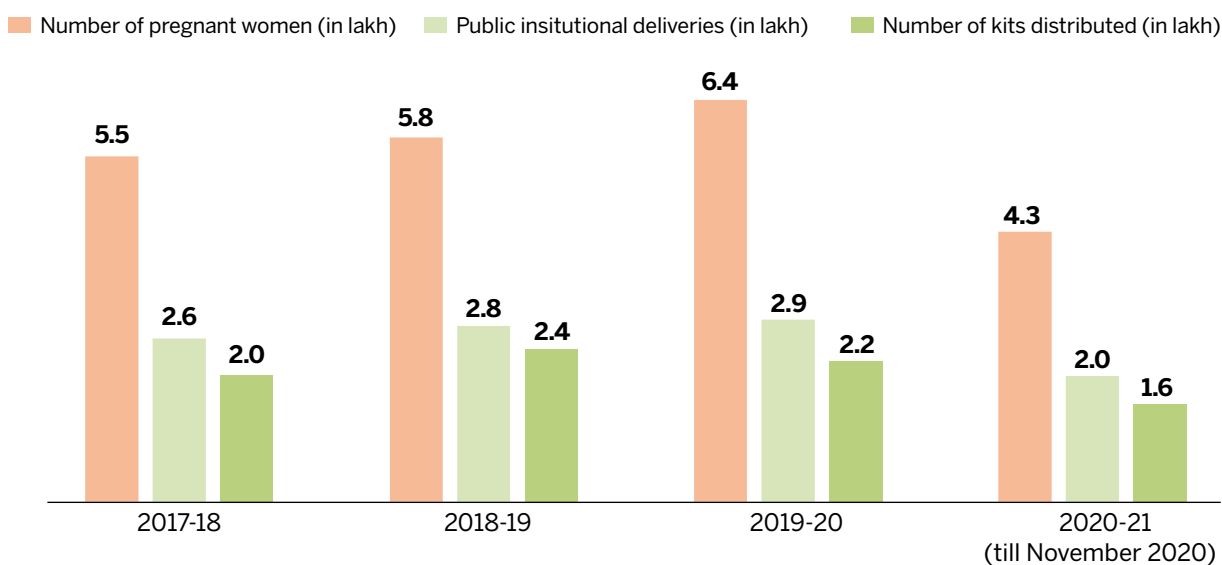
excessive blood loss, infection, high blood pressure, unsafe abortion and obstructed labour. This means that most maternal deaths are preventable with timely care by skilled health professionals. A range of maternal health interventions have been taken up by the Government with a focus on welfare of pregnant women, to ensure safe deliveries and proper antenatal check-ups.

9.2.2.1 KCR Kit

As part of the endeavour to ensure health of mother and child, the 'KCR Kit' programme was launched in June 2017. The programme was designed to avoid any wage loss during the pregnancy. After delivery, mothers receive a kit containing 15 utility items. Additionally, wage compensation of Rs. 12,000 (Rs. 13,000 in case of female child) is paid to mothers in four tranches. The beneficiaries (pregnant women) of this programme have been increasing every year, indicating a wider reach and an increase in institutional deliveries in public facilities (Figure 9.3).

Figure 9.3

Beneficiaries of KCR Kits status (2017-20)



Source: Department of Health and Family Welfare

¹ The National Family Health Survey (NFHS) provides important data on the status and improvement of key maternal and child health and nutrition indicators in the country. Released in December 2020, the NFHS-5 data for the state was collected from 27,351 households, 27,518 women, and 3,863 men, and is analysed under Phase 1 of NFHS-5.

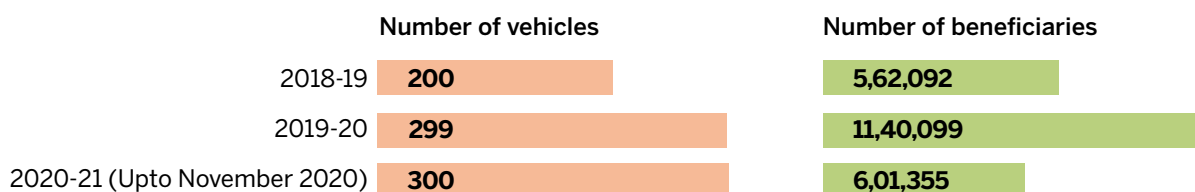
9.2.2.2 Amma Odi

The '102 Referral Transport Service' (Amma Odi) is an important programme to ensure the safety and well-being of pregnant women and neonatal children. The objectives of the programme is to transport pregnant women for four ANC check-ups and delivery, transport postnatal women and neonatal children after delivery, and transport mothers and children for immunizations. In addition, the Government operates an exclusive call centre for managing and coordinating transport facilities, tracking pregnancies and managing emergency cases related to pregnant women. As of November 2020, there were 300 vehicles as part of the Amma Odi programme (Figure 9.4).

In addition, the Government has started a '104' helpline, the Fixed Day Health Services (FDHS), with the primary objective of providing people in remote and inaccessible areas with a set of preventive, promotive and curative services, including reproductive and child health services, at no cost.

Figure 9.4

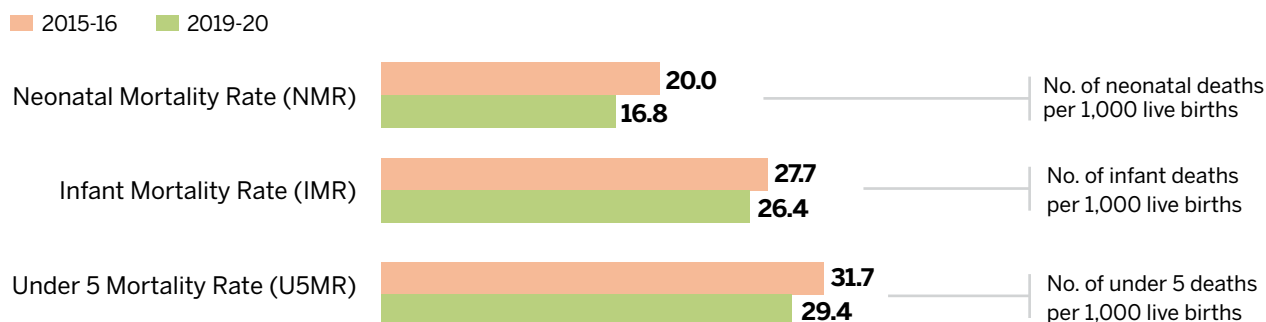
Year wise performance of Amma Odi Programme



Source: Department of Health and Family Welfare

Figure 9.5

Current status of Child Mortality Rate



Source: National Family Health Survey-Round 4 and 5

9.3 Child Health

In addition to improving maternal health, the Government is making concerted efforts to ensure that every child is born healthy, and grows and thrives to realize their full potential.

9.3.1 Child Health Outcomes

9.3.1.1 Child Mortality Rate

The first step towards improving children's health is to ensure that infants survive. Infant mortality rate, which measures the number of deaths of children under the age of one, is decreasing in the state and is below the national average. Similarly, the under-5 mortality (deaths of children under the age of five) has also decreased and is below the national average. The state's performance is at par with other states with similar GSDP.

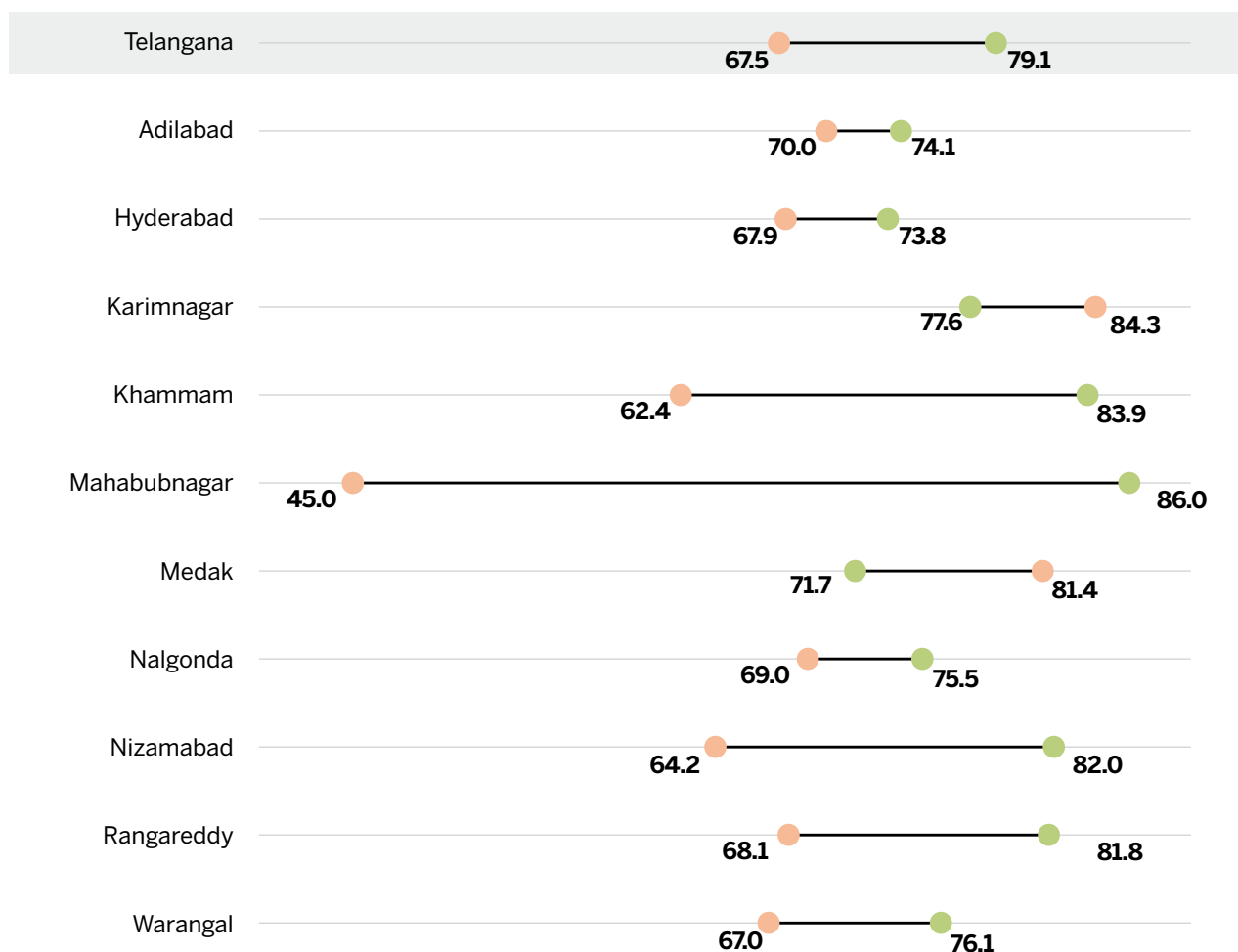
Figure 9.6

Telangana and erstwhile districts comparison between 2015-16 and 2019-20 for fully immunized children

Share of fully immunized children (%) have increased in most districts

● NFHS-4 (2015-16) ● NFHS-5 (2019-20)

Fully immunized children (%)



Districts arranged in alphabetical order

Note: Fully Immunized Children 12-23 months (BCG, Measles and three doses of Pentavalent vaccine) based on information from either vaccination card or mother's recall; For NFHS-5 estimates, new to old district mapping is used to compute weighted averages for erstwhile districts using district population as weights

Source: National Family Health Survey-5

9.3.1.2 Immunization

Immunization is an important step in protecting children's health. According to NFHS-5, the share of children in the age group of 12-23 months who are fully immunized (i.e. those that have received the BCG, measles and three doses of the pentavalent

vaccine) increased to 79% in 2019-20 (from 68% in 2015-16). The increase was the highest in the erstwhile districts of Mahabubnagar and Khammam, while in Karimnagar and Medak the shares decreased. The share of children who received their vaccinations in a public health facility also increased to 94.1% in 2019-

20 (from 83.6% in 2015-16).

9.3.2 Programmes and Initiatives to Improve Child Health Outcomes

The improvement in child health outcomes reflect the Government's commitment and initiatives to reduce child mortality and expand immunization coverage.

9.3.2.1 Special Newborn Care Units (SNCUs)

SNCUs are neonatal units in the vicinity of labour rooms, which provide special care to sick newborns. The Government plans to establish 40 SNCUs across the state, of which two are 12-bedded SNCUs in tribal areas, and the remaining are 20-bedded SNCUs and two Mother-Neonatal Intensive Care Unit (MNCUs). Since 2017-18, there have been nearly 1.2 lakh children admitted into these units, of which 91,081 have been discharged successfully (as of November 2020).

9.3.2.2 Universal Immunization Programme (UIP)

Under UIP, vaccines are administered free of cost to children, for prevention of 12-vaccine preventable diseases such as polio, measles, rubella, hepatitis-B, diphtheria and so on. On 31st January 2021, the special National Immunization Day Pulse Polio Immunization (NID PPI) round was conducted and nearly 40 lakh children aged below five were immunized with the oral polio vaccine.

9.3.2.3 Mission Indradhanush Programme

The special Intensified Mission Indradhanush aims to identify, enumerate and immunize unvaccinated and partially vaccinated children and pregnant women. Intensified Mission Indradhanush (IMI) 2.0 was conducted in all three Aspirational Districts of the state—Jayashankar (including Mulugu), Khammam and Kumuram Bheem—in four rounds, and these districts have now achieved 100% immunization.

9.4 Nutrition

The Government has put considerable efforts in promoting optimal dietary and feeding practices to meet the nutritional needs of pregnant and lactating mothers, and children with consistent focus, especially during critical time periods.

The main vehicle for the Government to improve nutrition outcomes is the Integrated Child Development Services (ICDS), which is a flagship programme (as part of the Centrally Assisted State Plan Schemes) and provides a package of health, nutrition and education services to women and children. At present, these services are delivered through 31,711 main AWCs and 3,989 mini-AWCs functioning in 33 districts across the state. In 2020-21, around 4.8 lakh pregnant and lactating women and 23 lakh children in the age group of 7 months to 6 years benefitted from the programme.

9.4.1 Nutrition Outcomes

9.4.1.1 Key Indicators

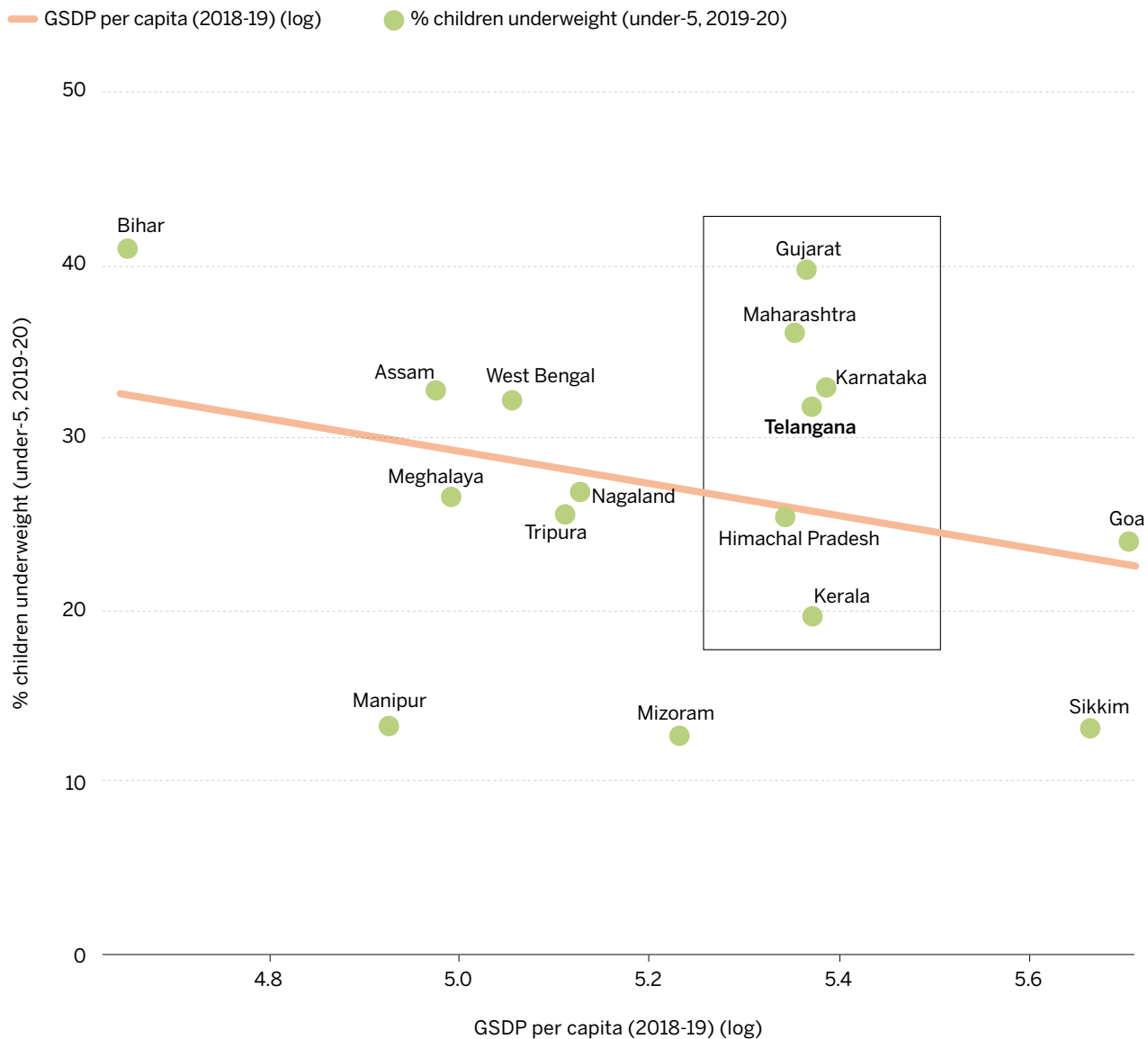
The Government's goal is to improve nutrition outcomes in the state (i.e. reduce malnutrition). There are four indicators of malnutrition that are commonly used across the country: wasting (low weight-for-height), stunting (low height-for-age), underweight (low weight-for-age) and anemia (low red blood cell or hemoglobin levels).

According to NFHS-5, almost all of the 22 surveyed states, including Telangana, witnessed an increase in malnutrition between 2015-16 and 2019-20. Around 21.7% of children under five years of age in the state were wasted, 33.1% were stunted and 31.8% were underweight in 2019-20. In addition, 70% of children and 53.2% of pregnant women were anaemic. These results are in line with other states, especially after adjusting for per capita GSDP, an important factor in determining nutrition outcomes.

Figure 9.7

State-wise comparison of underweight children and per capita GSDP

Underweight children across states vs state per capita GSDP



Source: National Family Health Survey-5, 2019-20, Directorate of Economic and Statistics (DES)

In states with similar per capita GSDP, Gujarat, Himachal Pradesh, Karnataka, Kerala, Maharashtra and Telangana, the State is performing better than all other states except Kerala and Himachal Pradesh (Figure 9.7). As seen in the graph, most Himalayan and Northeastern states have seen better outcomes, partly explained by traditional diets, but the causal factors need to be ascertained.

9.4.1.2 Determinants of Malnutrition

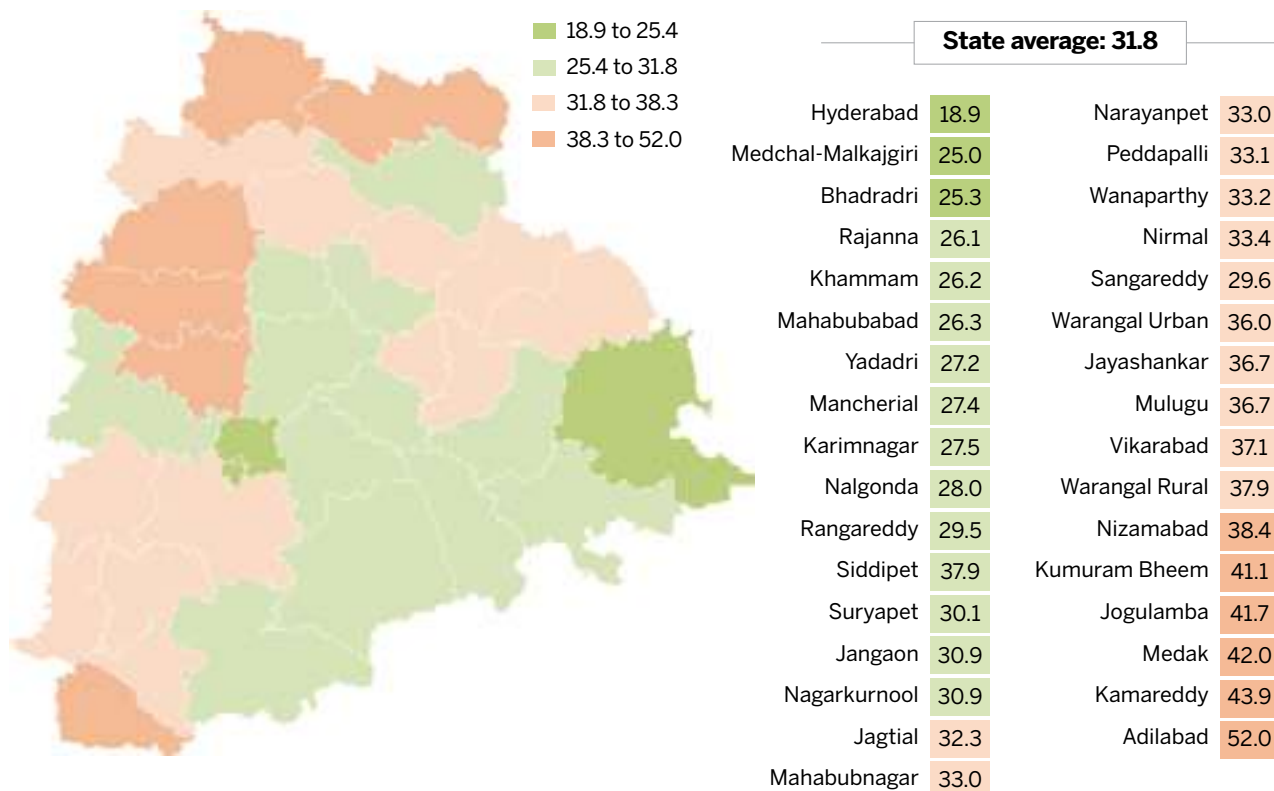
Several interrelated factors impact mother and child nutrition. These factors include:

- Immediate and direct determinants, such as dietary intake, diseases, habits and practice
- Underlying or nutrition-sensitive factors related to access to resources and services, such as maternal education, household income, access

Figure 9.8

Underweight percentages across districts in Telangana

Share of underweight children across districts



Source: National Family Health Survey-5, 2019-20

Note: NFHS-5 was conducted before the districts of Mulugu and Narayanpet were formed. In this map, their scores are the same as that for Jayashankar and Mahabubnagar (the districts they were bifurcated from) respectively.

to healthcare, food, sanitation, drinking water and hygiene

- Macro factors related to policies, governance, politics and the environment

Given these different determinants, mitigating malnutrition requires a comprehensive set of multisectoral interventions and approaches. To do this, the Government, through the ICDS and other initiatives, has implemented interventions to address both immediate determinants and underlying determinants.

The immediate determinants of maternal and child nutrition that can be improved through ICDS interventions are: inadequate dietary intake, exclusive

breastfeeding and early initiation of breastfeeding. Within the state, 9.2% of children aged 6-23 months receive an adequate diet, 68.2% of children under age 6 months are exclusively breastfed and 37.1% of children under age 3 years are breastfed within one hour of birth (NFHS-5).

Similarly, Iron and Folic Acid Tablets (IFA) distribution to pregnant and lactating women is one of the key priorities of the Government, since it directly addresses anaemia. Among pregnant women in the state, IFA tablet consumption is at 57.9%. Due to the consistent efforts of the Government, the number has increased by 5.2% from 2016 to 2020. Like this, the Government, through the ICDS schemes, has been taking multiple initiatives to improve the immediate

Table 9.1**Schemes, Beneficiary Coverage and Primary Areas of Intervention 2020-21**

	Coverage	Dietary Provision (SNP)	WCD Department	HM&FW Department
			Awareness (Communication & monitoring)	"Overall Health (Immunization, Referral and check-ups)"
Pregnant mothers	3,41,030	Aarogya Lakshmi (ICDS - SNP) hot-cooked meals + iron supplement + milk and eggs	Nutrition, counseling & care, health-related checkups	Immunization referral services
Lactating mothers			Infant and Young Child Feeding (IYCF), counseling & care, health-related checkups	Immunization referral services
Children: 7 months to 6 years	13,57,586	Weaning food -Balamrutham (ICDS - SNP) + eggs SSFP	IYCF, counseling & care	Immunization referral services

Source: Women Development & Child Welfare Department

determinants of nutrition.

At the same time, the Government is committed to addressing underlying determinants, such as access to clean drinking water and sanitation; 100% of households in the state have access to drinking water. The Government is increasing awareness of best practices, including water, sanitation and hygiene (WASH) practices. Optimum WASH practices ensure that the child is safe from spread of diseases and catalyze the improvement of nutrition outcomes.

9.4.2 Arogya Lakshmi and POSHAN Abhiyaan: Key Programmes to Improve Nutrition Outcomes

The state is implementing various Centre and state-sponsored schemes that aim to improve nutritional outcomes. These include Arogya Lakshmi - Supplementary Nutrition Programme (SNP) & POSHAN Abhiyaan (National Nutrition Mission). All

these schemes cater to the health and nutritional needs of three groups: pregnant women, lactating women and children from 0 to 6 years of age.

9.4.2.1 Arogya Lakshmi Programme (SNP)

The programme provides pregnant women and breastfeeding mothers with supplementary nutrition and support through spot feeding, administration of micronutrients, growth monitoring and counseling services. The programme is currently implemented in all the ICDS projects, covering 35,700 AWCs in the state.

Specifically, the programme provides pregnant women and lactating mothers with one full meal for 25 days, and 200 ml milk and one boiled egg for 30 days across all ICDS projects. In addition, women are also administered iron supplements during pregnancy. Children (aged 7 months to 3 years) are provided with balamrutham, weaning food prepared from roasted wheat, bengal gram, milk powder, sugar and oil for 25

days along with 16 eggs every month. Older children (3-6 years) are provided with mini-hot meals and 30 eggs per month (Table 9.1).

The Government has also introduced Balamrutham Plus in the state, which is an enhanced nutrition food fortified with additional carbohydrates, proteins and micronutrients for SAM (severe acute malnutrition) and MAM (moderate acute malnutrition) infants.

The programme was piloted in Kumuram Bheem and Jogulamba districts, and will be scaled up to other districts. The nutritional supplement will be manufactured by the state government agency, TS Foods.

9.4.2.2 Nutrition Rehabilitation Centres (NRC)

Nutrition Rehabilitation Centres were established in

Box 9.1

Adopting Artificial Intelligence for Accurate Growth Monitoring of Newborns

Early and accurate determination of malnutrition in children is crucial to ensure interventions are targeted effectively. However, identifying undernourished children early can be difficult. Frontline workers assess child nutrition by determining whether the child is stunted, wasted or underweight, through a variety of growth measurements, such as estimating weight, height and middle-upper arm circumference. There are various potential sources of errors in the process: manual data entry errors, human errors, device related errors, capacity gaps, etc. These errors often become a bottleneck for timely interventions.

One potential solution to these problems could be artificial intelligence (AI). For instance, Wadhvani Institute of Artificial Intelligence, a research institution, has come up with an AI-powered virtual anthropometry mobile application that will enable frontline workers to weigh and classify newborns and measure head circumference by recording a short video on a generic smartphone without any specialised equipment or physical examinations. The app does not need network connectivity or additional hardware. The technology is

open-source and can be used freely by the governments and other stakeholders.

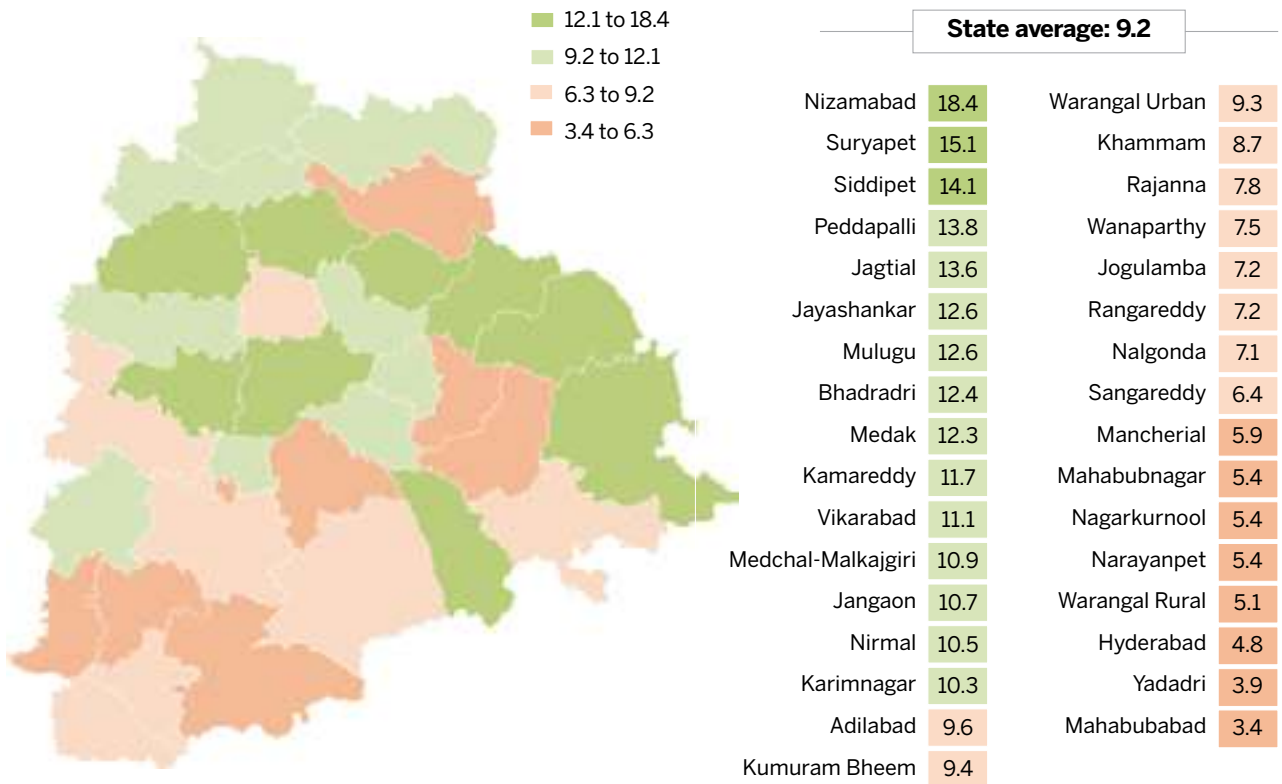
After the Government declared 2020 as the year of AI in the state, Wadhvani AI signed an MoU with the Government, with adoption of AI for growth monitoring as one of the possible applications. Similarly, Welthungerhilfe, an international non-profit organization has developed an AI-powered smartphone app called Child Growth Monitor (CGM) that can scan children and instantly detect malnutrition. Welthungerhilfe, along with its partners Action Against Hunger, MGSA and Darshna Mahila Kalyan Samiti, has piloted these AI solutions in three states: Madhya Pradesh, Maharashtra and Rajasthan.

The use of AI technology provides a lost cost, highly accurate alternative solution for measurement problems. Consequently, AI-tech solutions hold an immense potential to assist frontline workers in helping thousands of malnourished children by improving data management, and by freeing up resources, investment and time for delivery of service.

Figure 9.9

Total children in the age group of 6-23 months who received adequate diet

% of children in the age group of 6-23 months who received adequate diet



Source: National Family Health Survey- 5, 2019-20

Note: NFHS-5 was conducted before the districts of Mulugu and Narayanpet were formed. In this map, their scores are the same as that for Jayashankar and Mahabubnagar (the districts they were bifurcated from) respectively.

2012 to provide nutritional and clinical management services to children with Severe Acute Malnutrition (SAM). There are 12 NRCs functioning in the state, out of which 10 are 20-bedded and 2 are 10-bedded in tribal areas of the state.

9.4.2.3 Kangaroo Mother Care (KMC) Centres

There are 22 Kangaroo Mother Care (KMC) Centres in the state which offer simple, cost-effective and preventive care to mothers and newborns. This care includes services such as breastfeeding and continuous skin-to-skin contact between mother and newborn, for low birth weight infants. The care

improves exclusive breastfeeding and duration of breastfeeding, and reduces infections in newborns. It promotes growth and development of the child, increases mother child bonding, and reduces stress in both mother and baby. Out of 1,81,157 admissions in SNCUs, 27,103 newborns were given care in KMCs between 2015 and December 2020.

9.4.2.4 POSHAN Abhiyaan - National Nutrition Mission

POSHAN Abhiyaan is a flagship programme of the Government of India, launched in 2018 to improve nutritional outcomes in children, pregnant women and lactating mothers. It seeks to address the issue

of malnutrition through a four-pronged strategy: inter-sectoral convergence for better service delivery; use of technology (ICT) for real time growth monitoring; tracking of women and children; intensified health and nutrition services for the first 1,000 days; and Jan Andolan. An amount of Rs. 230 crore was released under this programme during 2020-21.

Major activities implemented in 2020 under POSHAN Abhiyaan include:

- **Providing growth-measurement devices:** All 35,700 AWCs were provided with a set of growth monitoring devices (infantometers, stadiometers, infant weighing scales and mother and child weighing scales). A growth monitoring drive was conducted in the month of September 2020. Around 13 lakh children per month under the age of 5 years were weighed for growth monitoring.
- **World Breastfeeding Week celebrations:** Breastfeeding Week was celebrated during the first week of August 2020 on the theme 'Support breastfeeding for a healthier planet', to build awareness on the importance of breast milk and right feeding practices. This was broadcasted on the Society for Telangana State Network (SoFTNET/T-SAT) channel. Myth buster videos were produced and disseminated to demystify myths around breastfeeding. The content was contextualized for urban and rural/tribal audiences.
- **Nutri-gardens:** A drive was undertaken to set up nutri-gardens at every AWC and encourage household nutri-gardens. Nutri-gardens address the challenges of malnutrition by ensuring that the village has access to diversified vegetables for hot cooked meals and for promoting healthy eating habits. Currently, 32,728 AWCs (92%) have developed Nutri Gardens.
- **Poshan Pakhwada and Poshan Maah:** Poshan Pakhwada and Poshan Maah were celebrated in

AWCs. These celebrations were used to create awareness on nutrition improvement and growth monitoring.

- **AWC coverage:** All habitations and ASHAs were mapped with the nearest AWC to identify uncovered habitations and measure proximity to AWCs. The exercise was conducted to ensure service delivery to all eligible beneficiaries.

9.4.2.5 Anganwadi Helpline

In April 2018, the Government launched the Anganwadi Helpline: 155209, to ensure better services to its beneficiaries. The Helpline functions from 9:30 am to 5:00 pm and has multi-pronged objectives. Firstly, it provides information regarding the process, due date and location of delivery of provisions and services and how they can be accessed. Secondly, it allows beneficiaries to lodge grievances and calls back beneficiaries to confirm whether the issues were resolved. Additionally, the helpline can be used by Anganwadi workers to register issues and suggestions to improve services and nutrition outcomes. Lastly, insights from the helpline get reflected on a dashboard and serves as a platform for state and district level to monitor the status of grievances. Since its inception, the helpline has received a total of 54,192 calls with 99% of calls getting answered.

9.4.2.6 Tech, Innovation and Improvements

In addition to the implementation of key schemes, the Government is constantly exploring avenues to improve service delivery. In 2020-21, despite COVID-19, the Government has taken up innovative and technology-based initiatives to improve service delivery.

- **Supply Tracking:** The Government adopted an online biometric portal for commodity supply tracking to ensure that the supplies reach the doorstep of all AWCs.

Box 9.2

Leveraging the Anganwadi Helpline to Improve Nutrition Outcomes

An important determinant of nutrition and health outcomes is the attitudes, perceptions and practices around health and nutrition decision-making. One increasingly powerful way to change attitudes and practices is phone-based communication. For instance, studies in India and around the world have shown a 10-20% improvement in breastfeeding practices through phone-based approaches (Patel et. al, 2018). Similarly, in Bihar, the “Kilkari” programme launched in 2013 contacted women during their second trimester of pregnancy through an automated, pre-recorded IVRS weekly call. These calls informed women of best practices and increased their consumption of IFA tablets (Jerin et. al., 2020).

Recognizing the importance of establishing a communication medium with its beneficiaries, the Government launched the Anganwadi Helpline in 2018. The toll-free helpline is equipped to provide grievance redressal and query resolution. As a next step, the Government plans to include contextualized interactions, and integrate existing evidence-based guidelines to provide sustained communication for behaviour change. These include:

- Gathering structured beneficiary feedback

(both qualitative and quantitative) to track the performance of service delivery, assess gaps and course-correct in a timely manner

- Using a balanced communication strategy (tech-enabled yet sufficiently personalized) to share pertinent and timely information with beneficiaries

Such interventions could prove to be highly cost-effective in improving nutritional outcomes.

References

Jerin, I., Akter, M., Talukder, K., Talukder M., Rahman, M. (2020). Mobile phone support to sustain exclusive breastfeeding in the community after hospital delivery and counseling: a quasi-experimental study. *Int Breastfeed J* 15, 14. Available at: <https://doi.org/10.1186/s13006-020-00258-z>

Patel, A., Kuhite, P., Puranik, A., Khan, S., Borkar, J., Dhande, L. (2018). Effectiveness of weekly cell phone counselling calls and daily text messages to improve breastfeeding indicators. *BMC Pediatr* 18, 337. Available at: <https://doi.org/10.1186/s12887-018-1308-3>

- **ASHAs map to AWCs:** As part of NHTS and KCR Kit data integration, ASHAs were mapped to AWCs to improve coordination between the field level functionaries of health and WCD departments. The mapping exercise was completed in Jayashankar, Kumuram Bheem, Nagarkurnool, Mahabubabad and Mulugu districts.
- **Habitations map to AWCs:** All habitations were mapped with AWCs to chart out the list of habitations that remain uncovered by AWCs. The exercise was taken up to ensure last mile service delivery to all eligible beneficiaries.

9.5 Way Forward

To carry forward and build on the practice of institutionalizing innovative solutions to improve nutrition outcomes, the Government has identified additional areas of improvement for 2021. A few of these measures include:

Enhancing technology adoption

- The Government plans to launch a state-of-the-art application for Anganwadi workers in order to digitize and integrate register systems, replacing manual registers currently in use. This initiative will help collect accurate data and improve evidence-based decision making and data-usage.

- The Government is also planning to adopt more effective and economical technologies to improve the process of growth monitoring.

Accurate growth measurement

- A regular intensive growth monitoring drive is being launched for accurate child measurement. Supervisors will ensure correct calibration of growth monitoring devices across Anganwadi centres in the state. This will improve service delivery and targeting, boosting the status of maternal and child nutrition.

Revised and improved supervision

- The Government plans to introduce interventions that strengthen supervision across each level of service delivery. Multiple levels of checks and necessary counselling to each functionary within the ICDS delivery system will bring in a holistic transformation of the supervisory system to significantly improve service delivery.

Beyond these initiatives, the Government will continue to implement programmes and deliver services to improve health and nutrition outcomes for mothers and children across the state.



CHAPTER 10

EDUCATION AND SKILL DEVELOPMENT



Key Highlights

The Government of Telangana is committed to providing quality education and skill development for its citizens, starting from preschool education to higher education and skill development. Accordingly, the Government is implementing several programmes and measures to improve education and skilling outcomes in the state:

- The Government provides preschool education for children aged 3 to 6 years through Anganwadi centres.
- During COVID-19, as educational institutions were shut down, the Government shifted the mode of education from offline to online and ensured that learning continued while maintaining the safety of children.
- To improve learning outcomes, the Government is focused on foundational literacy and numeracy (FLN) as recommended by the National Education Policy 2020.
- Several measures have been taken to ensure access to education, such as investing in school infrastructure, establishing residential schools and providing financial assistance in the form of scholarships to students from marginalized communities.
- Providing employable skills to educated and uneducated youth, through vocational education in different trades, technical education, etc.
- The state literacy rate was 72.8% in 2018 (NSSO) and the aim of the Government is to achieve universal literacy in the state.



10.1 Introduction

Access to quality education is the foundation for development of any economy and society. The Government is committed to building this foundation by providing quality education and skill development. The overall goal for the Government is to ensure inclusive and equitable quality education and promote lifelong learning opportunities. To achieve this, the Government spent about 2% of the state's Gross Domestic Product (GDP) on education in 2019-20.

10.2 Preschool Education

Education does not begin just when a child enters school. The foundation for future learning is built during early childhood, a period for significant brain development. Research has shown that early childhood education establishes language and reasoning abilities, problem solving skills and social and emotional intellect. Therefore, a strong preschool education system is essential for improving learning outcomes and long-term development.

Cognizant of this, the Government has made efforts to strengthen preschool education in the state. Preschool education is provided to 4.5 lakh children in the age

group of 3 to 6 years through 35,700 Anganwadi centres (AWCs) in 33 districts of the state. Each AWC is equipped with a preschool education kit, containing activity books, workbooks, charts, toys and other items to support learning. The three-year curriculum is organized as nursery, LKG (lower kindergarten) and UKG (upper kindergarten). Child Assessment Cards are prepared thrice a year to assess the development of the child across different domains. A preschool certificate is issued to children leaving the AWC and enrolling in class 1.

10.3 School Education

10.3.1 COVID-19: The Response of Telangana

The COVID-19 pandemic has forced the Department of School Education to close all schools in the state (both government and private) since March 2020. While this measure addresses health concerns, it has greatly affected the learning abilities of students and the cost of these closures are likely to cause a ripple effect for years to come. To mitigate the adverse impacts of school closure and ensure children continue to learn, the Government has implemented several measures. It launched an e-learning programme from September 1st, 2020 for all government school students. Guidelines were issued to resume classes digitally

for remote learning. Teachers regularly interact with students online, and inform them about class schedules, clear doubts and assign homework. They also submit information weekly on a web portal. For students without access to TV channels, smartphones or computers, teachers are required to seek support from Gram Panchayats, youth volunteers, or families in the neighbourhood who have digital access. Cluster Resource Persons (CRPs) were given responsibility to organize the online remote learning programme at the ground level. Their work is monitored by 33 Sectoral Officers (SOs) and 5 Supervisors at the Office of Samagra Shiksha, Hyderabad.

A phone-based survey of 6,600 parents and students conducted by the Department to monitor this distance learning programme presents important insights. With 91% of the students having access to TV, and 71% having access to smartphones, it has been possible for teachers to resume teaching. Similarly, 87% of the students reported that they have been contacted by their teachers at least once since the launch of the programme. Students have also received homework assignments which they are predominantly submitting through WhatsApp. These surveys were used by District Education Officers (DEOs) to initiate action on improving the remote learning programme.

Additionally, 11.3 lakh students have utilized the digital lessons through T-SAT or Doordarshan and 2.2 lakh students through smartphones or computers. More than 85% of the students are viewing lessons through digital means, and the rest receive worksheets for self-learning. To support children with special needs enrolled in Inclusive Education Resource Centres in the state, tele-services are being provided to their parents. Special educators guide parents on overcoming the challenges faced by their children during the pandemic.

In January 2021, the Government launched a WhatsApp chatbot, called the Intinta Chaduvala Panta programme, to further help students learn at home. The chatbot would send them worksheets, answer keys, as well as relevant video links for learning. By 25th February 2021, around 1.9 lakh

students had started quizzes in at least one subject and 1.8 lakh students had at least completed one quiz. More students from higher classes (7-10) have been utilizing it, than those from lower classes (1-3) while Mancherial, Karimnagar and Nizamabad districts have the highest rates of usage.

Since 1st February 2021, all schools and colleges, except primary schools, have reopened in the state. All necessary precautions have been put in place: classrooms and other areas are regularly sanitized; teachers and students are required to wear facemasks and wash their hands at regular intervals; students with symptoms are asked to stay at home; and awareness campaigns are being conducted. The Department has also decided that for students of classes 1st to 5th the schools will remain closed for the rest of the academic year, and all students promoted to the next class.

10.3.2 Foundational Literacy and Numeracy (FLN) and Learning Outcomes

The Government is committed to improving learning outcomes—the most important indicator in education. Learning outcomes go beyond measuring whether children are attending school and assess whether they are actually learning in school. The National Education Policy (NEP) 2020 has urged states to focus on learning outcomes as the main indicator for measuring progress in education. In particular, the NEP has stressed the importance of foundational literacy and numeracy (FLN), targeting that every child attains FLN by class 3, by 2025.

The Government has instituted a large-scale, state-wide assessment and remedial programme to improve FLN. ABC (Attainment of Basic Competencies) assessments are conducted twice a year in all government schools, in three stages. The first stage evaluates the number of children who need remedial support to build basic competencies (reading, writing and arithmetic). In the second, support is provided in the form of a 45-60 day remedial programme conducted in schools. The third stage

Box 10.1

Leveraging Technology to Deliver Better Education

The pandemic has triggered a significant increase in the use of technology for learning. Even before the pandemic, technology in education (or EdTech) was growing rapidly but this has accelerated with school shutdowns. This presented an opportunity for the Government to further leverage technology to directly improve learning outcomes.

One of the biggest advantages of using technology for education is that content can be tailored to the level of the student. Research has shown that tailored instruction that adjusts for students' existing levels of learning is an extremely effective way to improve learning outcomes. While providing customized learning in classrooms can be challenging, new technology (e.g through adaptive learning software) allows individually-customized content to be delivered to students of different levels.

One such example of technology enabled adaptive learning, validated through rigorous research (Muralidharan, 2019) is Mindspark, a self-driven, customized and adaptive-learning software which has been used by the Government of the National Capital Territory of Delhi to successfully improve learning outcomes in Delhi's government schools and is now being attempted by a few state

governments. This software uses games, videos and activities to continuously assess students while providing explanations and feedback. A key feature of the platform is its ability to use data to identify the learning level of every student, deliver customized content targeted at this level, and dynamically adjust for the student's progress.

A study found that the software helped significantly improve learning outcomes. Government school students from low-income neighbourhoods who attended after-school classes at Mindspark centres scored much better marks in mathematics and Hindi compared to students from a similar background who did not use the software. Crucially, technology helped by delivering high-quality content, effective delivery and interface, and a well-designed and implemented programme. The Government is constantly exploring such technological innovations to improve learning outcomes in the state.

References

Muralidharan, K., Singh, A., & Ganimian, A. 2019. Disrupting Education? Experimental Evidence on Technology-Aided Instruction in India. *American Economic Review*, 109(4), 1426-1460. doi:10.1257/aer.20171112

again assesses the basic competencies of students and improvement from the remedial programme. The remedial programme is yielding positive results, as seen by the improved assessment scores in the third round of the programme. This programme highlights the Government's intent of ensuring that schooling is translating into learning.

10.3.2.1 Learning Outcomes

According to the National Achievement Survey (NAS) 2017, an assessment that conducts tests in government and government-aided schools, Telangana performed better than the national average in most cases, for both language and mathematics. Within the state, Medchal-Malkajgiri, Mancherial, Jangaon and Khammam had the highest scores (Figure 10.1). The

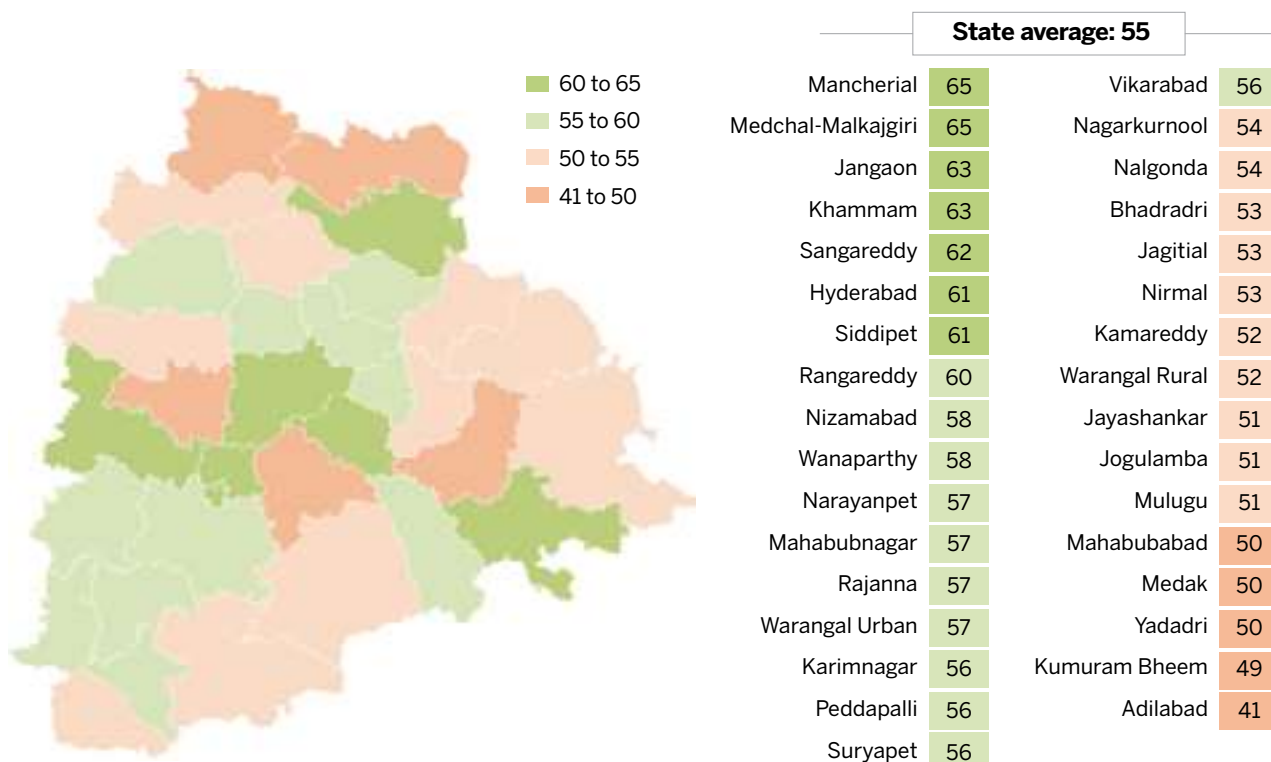
differences between NAS scores across gender (boys and girls) and location (rural and urban) were small. In some cases, girls performed better than boys and rural students than urban students.

10.3.3 Universal Access to School Education

To ensure universal access to education, the Government has invested in building schools across the state. Currently, the total number of schools in the state is 40,900 (Figure 10.2), of which 63.7% are government and local body schools¹ (26,065 schools), while 25.7% are private schools (10,501 schools). In addition, there are schools run by the Government of India (< 1%) and private-aided schools (1.64%).

Figure 10.1

District-wise average NAS 2017 scores (class 5)



Source: National Achievement Survey 2017

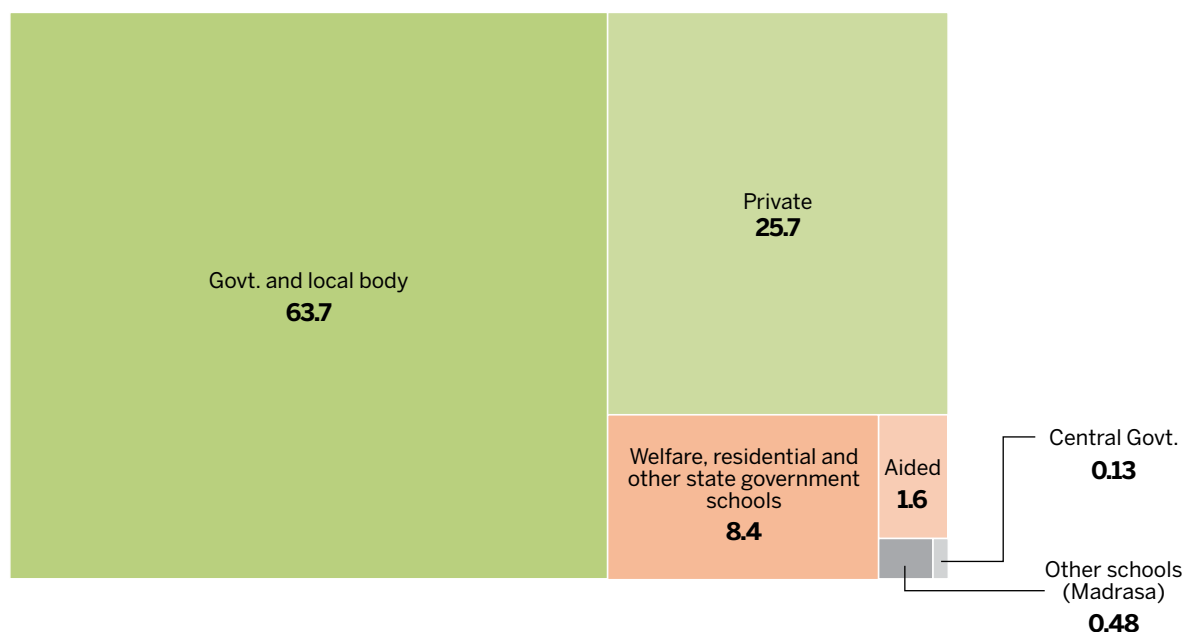
Note: NAS 2017 was conducted before the districts of Mulugu and Narayanpet were formed. In this map, their scores are the same as that for Jayashankar and Mahabubnagar (the districts they were bifurcated from) respectively.

1 This includes Zilla Parishad High Schools and Mandal Parishad Primary Schools run by district and mandal level authorities.

Figure 10.2

Number of schools in Telangana by management, 2019-20

% of total schools



Type of School	Central Govt.	Govt. and local body	Welfare, residential and other state government schools	Aided	Private	Other schools (Madrasa)	Total
Primary	0	18,240	1,557	291	553	112	20,753
Upper primary	3	3,164	153	123	3,969	59	7,471
Higher Secondary	48	4,661	1,726	258	5,979	4	12,676
Total	51	26,065	3,436	672	10,501	175	40,900

Source: Department of School Education

Hyderabad district has the most number of schools (2,902) and Jayashankar has the least (537).

The density of schools varies across districts, reflecting the varying population density in the state. In the northern districts of the state where the population is more sparsely distributed, there are more schools to promote access to education and reduce dropouts, in line with the Right to Education (RTE) Act. Consequently, Kumuram Bheem, Medak and Mulugu districts have the highest number of schools per 1,000 people while Medchal-Malkajgiri, Mahabubabad and Hyderabad rank the lowest (Figure 10.3).

Schools in the state have been upgrading their infrastructure facilities and, in many cases, they have better facilities than schools in the rest of the country.

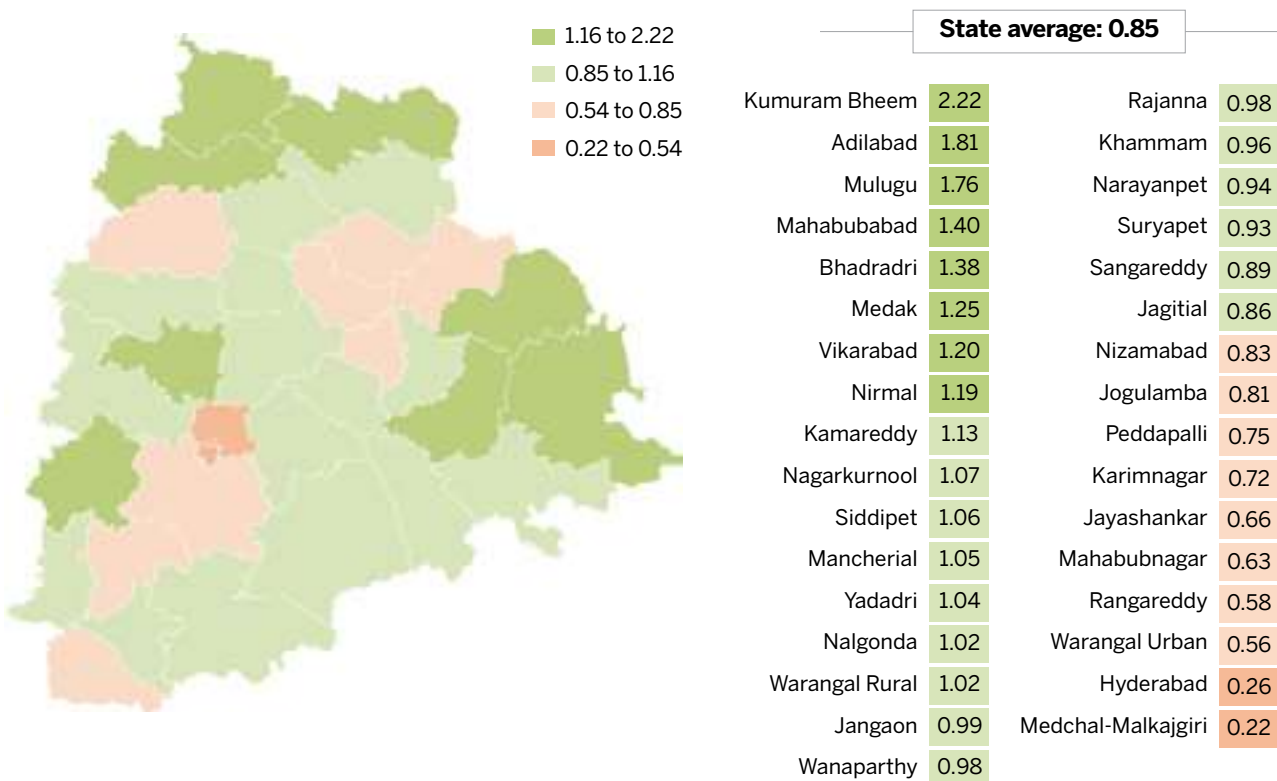
10.3.4 Enrolment

The total enrolment of students in different types of schools in the state in 2019-20 was 60.1 lakh, with 48.7% girl students. Of the total students, 46.1% (around 28 lakhs students) are enrolled in government schools, while 53.9% (around 32 lakhs) are enrolled in private schools. Therefore, while government schools make up a larger share of schools, more students are enrolled in private schools (Figure 10.4).

Figure 10.3

District-wise government school density, 2018-19

Number of schools per 1,000 population



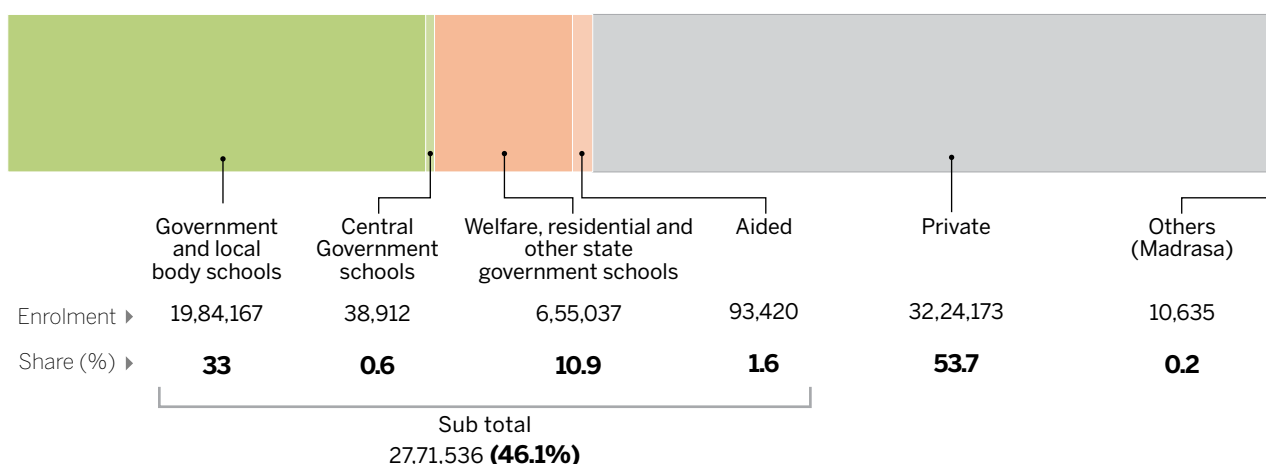
Source: UDISE+ / Census 2011

Note: Government schools here include schools run by the Department of School Education, other departments (including Tribal Welfare Department and Social Welfare Department), local body schools and government-aided schools.

Figure 10.4

Student enrolment by management, 2019-20

Grand total : 60,06,344

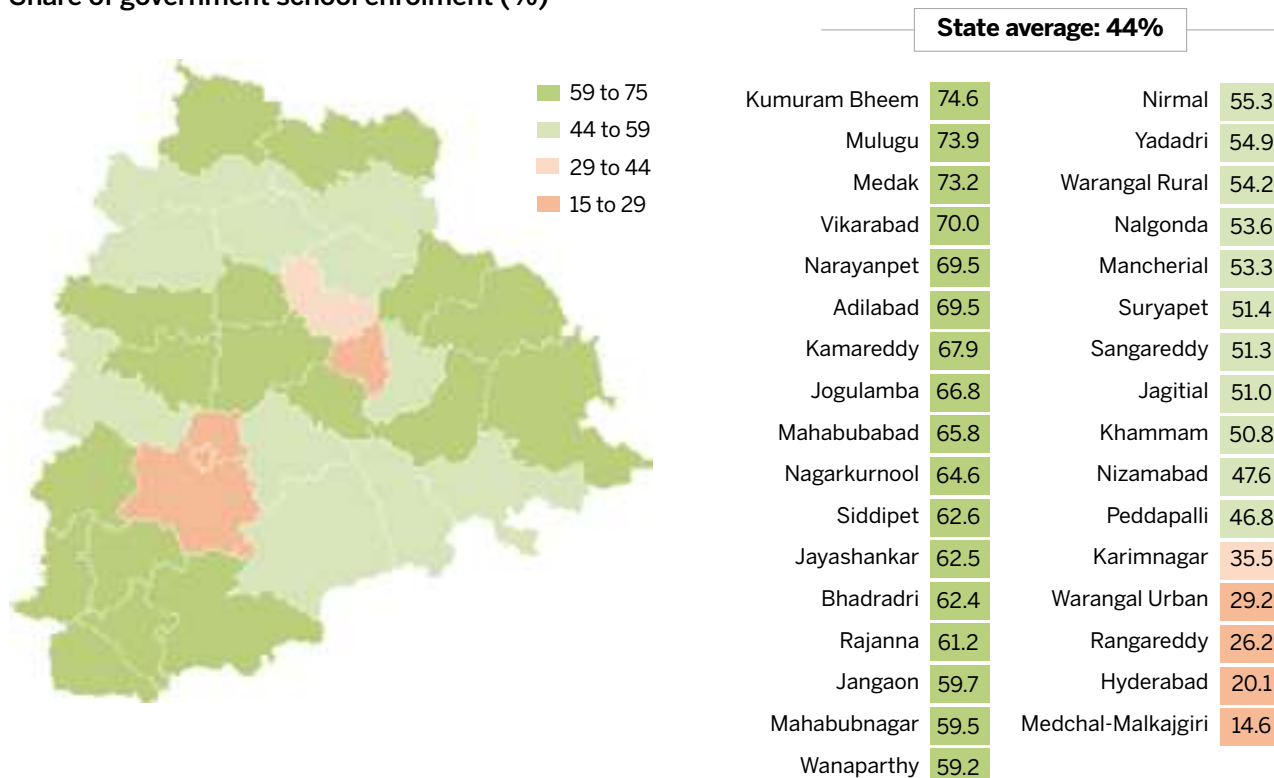


Source: Department of School Education

Figure 10.5

District-wise student enrolment in government schools as a share of total enrolment, 2018-19

Share of government school enrolment (%)



Source: UDISE+ / Census 2011

Note: Government schools here include schools run by the Department of School Education, other departments (including Tribal Welfare Department and Social Welfare Department), local body schools and government-aided schools.

The split between government school and private school enrolment is not uniform across districts. Kumuram Bheem, Mulugu and Medak have more than 73% enrolment in government schools, while Hyderabad and Medchal-Malkajgiri have less than 25% (Figure 10.5).

Despite the growth of private school enrolment, government schools remain an important driver of female education in the state. A larger share of girls than boys, particularly in the age group of 11-16 years, are enrolled in government schools (Figure 10.6). The trend is similar across most other states as well.

Around 38% of government schools in the state have less than 30 students (small schools). The large number of small government schools is partly a result of the Right to Education requirement of making schools more accessible. Most small schools (less than 30 students) are concentrated in the northern districts of the state, such as Kumuram Bheem, Mahabubabad and Adilabad (Figure 10.7). The northeastern districts on the map, with the highest share of small schools, coincides with Telangana's tribal belt. The region is characterised by low population density and larger distances between habitations. To ensure children from every habitation has access to school, the region has a large number of schools with low enrolment.

Box 10.2

Why FLN is Crucial to Achieving Educational Goals

Foundational literacy and numeracy skills (FLN) refer to basic literacy and numeracy skills which forms the foundation for all future learning. Foundational literacy skills include the ability to identify letters, read familiar words and listen with comprehension while foundational numeracy skills include the ability to identify numbers, add numbers and subtract numbers. Without these foundational skills, children will struggle to progress through the education system and will be unable to understand the more complex curriculum taught in later years. This learning gap will widen with time and increases the chances of students dropping out of schools entirely.

Beyond education, students with strong foundational skills are able to fully participate in society and have more agency over their careers. Basic literacy also has positive effects on health and social indicators, such

as child mortality and female empowerment. Importantly, building FLN skills during school years leads to higher earnings in the future and can therefore help drive economic growth.

References

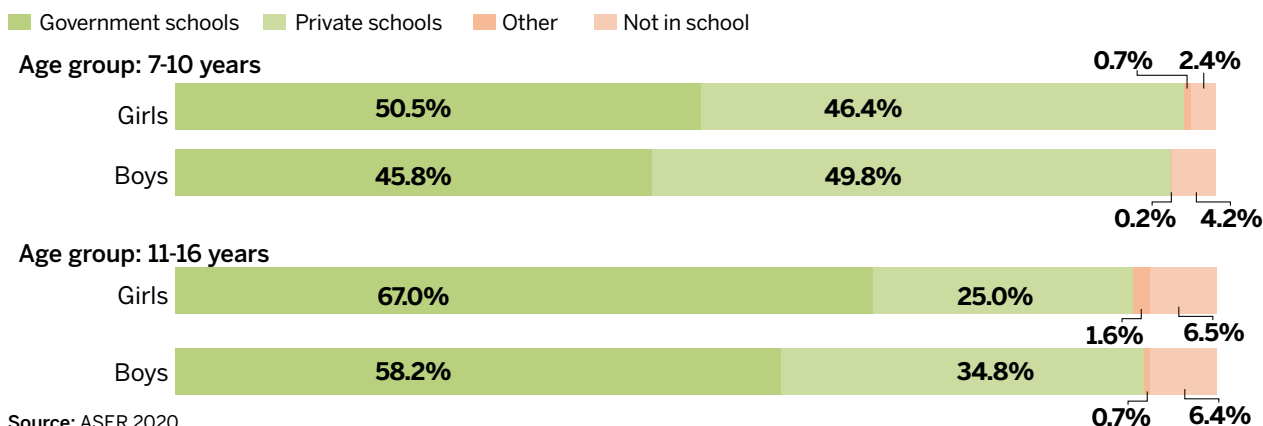
Belafi, C., Hwa, Y., and Kaffenberger, M. 2020. Building on Solid Foundations: Prioritising Universal, Early, Conceptual and Procedural Mastery of Foundational Skills. *RISE Insight Series*. 2020/021. https://doi.org/10.35489/BSG-RISE-RI_2020/021.

Spivack, M. 2020. To mitigate the effects of COVID-19 on education outcomes, systems should prioritise foundational skills and adapt instruction to children's learning levels. *Research on Improving Systems of Education (RISE)*. Issue Brief 20/01. https://doi.org/10.35489/BSG-RISE-IB_2020/01.

Figure 10.6

Distribution of enrolment by management and gender, 2020

A larger share of girls than boys are enrolled in government schools



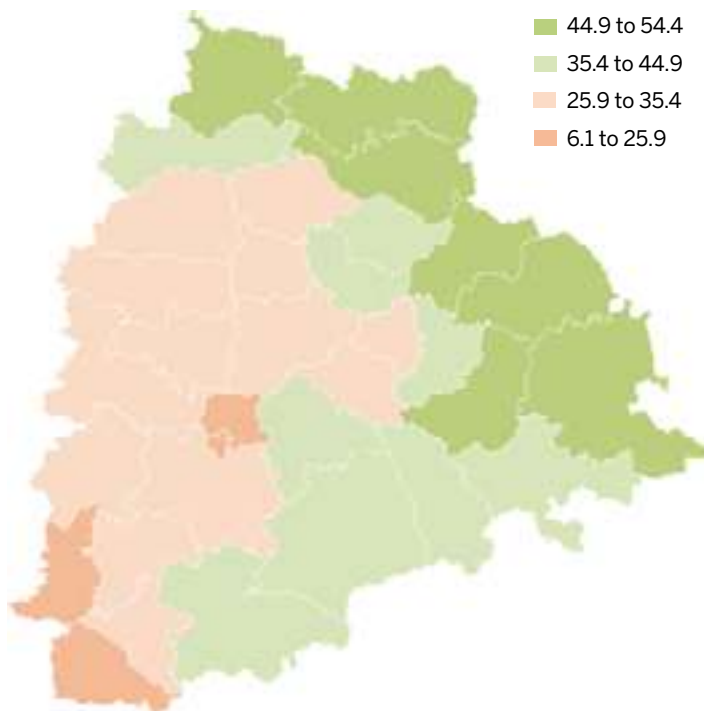
Source: ASER 2020

Figure 10.7

District-wise distribution of small schools (< 30 students), 2019-20

Districts in the tribal belt of the state have more small schools

Small schools as a share of total schools (%)



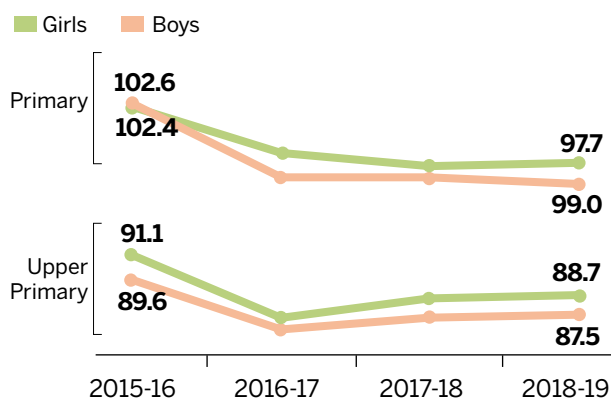
State average: 35.4

Kumuram Bheem	54.4	Mahabubnagar	33.0
Mulugu	52.3	Vikarabad	32.6
Mahabubabad	51.3	Warangal Urban	31.5
Adilabad	50.2	Sangareddy	29.8
Jayashankar	50.1	Jagitial	29.6
Bhadradi	49.2	Rajanna	29.4
Mancherial	49.1	Nizamabad	28.0
Peddapalli	43.1	Siddipet	26.9
Warangal Rural	42.4	Rangareddy	26.8
Karimnagar	41.6	Wanaparthy	26.7
Suryapet	40.4	Kamareddy	26.5
Nalgonda	39.2	Medak	26.3
Nagarkurnool	37.9	Narayanpet	21.8
Nirmal	37.0	Medchal-Malkajgiri	13.8
Yadadri	36.2	Jogulamba	12.3
Khammam	36.1	Hyderabad	6.1
Jangaon	34.7		

Source: Department of School Education

Figure 10.8

Year-wise Gross Enrolment Ratio



Source: Department of School Education

10.3.4.1 Gross Enrolment Ratios (GER)

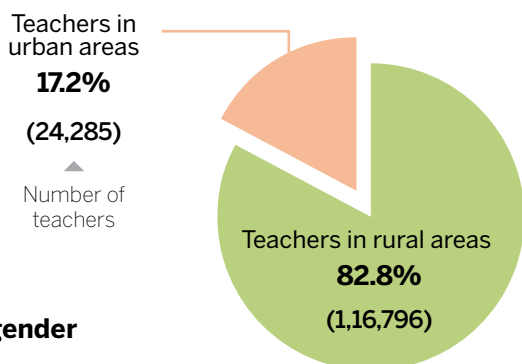
Gross Enrolment Ratio is a measure used in the education sector to determine the number of students enrolled in school at several different class levels (like elementary, middle school and high school). The enrolment rate among children during the year 2018-19, in primary schools was 98.9% for boys and 97.7% for girls, implying that almost every child in the state is enrolled in schools. In upper primary schools, the GER was 87.5 for boys and 88.7 for girls (Figure 10.8).

10.3.4.2 Dropout Rates

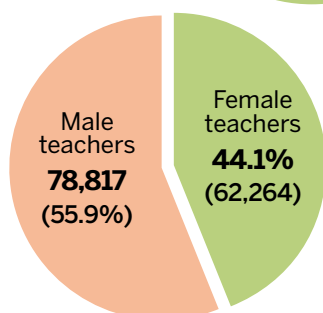
Dropout rate indicates the percentage of students who leave school at a given level before finishing their studies. The annual dropout rates for the year 2019-20 among secondary school students was recorded as 14% for boys and 10.7% for girls in the state. This is lower than the corresponding national averages—17.2% for boys and 16.9% for girls.

Figure 10.9
Social composition of government school teachers, 2017-18

By geography

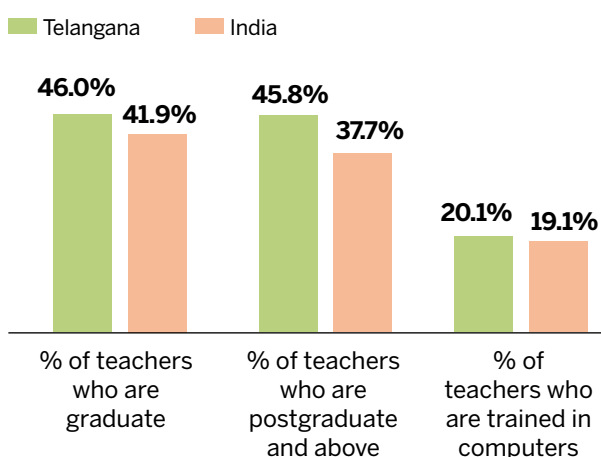


By gender



Source: UDISE

Figure 10.10
Qualifications of teachers in Telangana and India, 2018-19



Source: UDISE+

10.3.5 Teachers and School Administration

Teachers are one of the biggest determinants of learning outcomes. Trained teachers lead to improved learning at every stage of education, which ultimately leads to all-round development. There were around 1.4 lakh government school teachers in the state in 2017-18. Around 44% of these teachers are women and 83% teach in rural areas (Figure 10.9). The average Pupil-Teacher Ratio (PTR) in government schools is 17:1. This is well within the norm of 30:1 prescribed by the Right to Education (RTE) Act.

10.3.5.1 Teacher Training

An important indicator of teacher quality is the training they have undergone. The state has performed better on these indicators than the national average (Figure 10.10). Apart from the existing pre-service and in-service trainings, the Directorate of School Education, in coordination with the Confederation of Indian Industry (CII) Telangana, has been training government school teachers in basic IT skills across the state.

During the COVID-19 pandemic, the State Council of Educational Research and Training (SCERT) conducted capacity building programmes for teachers through interactive webinars on topics such as use of technology in teaching, physical and mental well-being of students, and so on.

10.3.5.2 Administration

Monitoring and management of teachers are essential to ensuring continuous improvement in teaching quality and increasing learning outcomes. Policy interventions in education are important to achieve universal FLN. However, it is only through on-ground monitoring of individual schools that interventions can be implemented and sustained. Administrative responsibilities in the department are structured across four levels of officials: District Education Officers (DEO), Mandal Education Officers (MEO), Complex Headmasters (HM) and Cluster Resource Persons (CRP). Each of them have a different mandate and responsibilities.

Box 10.3

Addressing Multi-Grade Teaching in Schools

The country has succeeded in ensuring that schools and schooling is taken close to almost every village and its children, with significant gains in enrolment and reduction in dropout ratio. This access has resulted in an increase in the number of small schools (schools with less than 30 children). Small schools usually do not have the critical strength for sanctioning teachers posts for every class. For instance, if there are 20 children spread across 5 classes (1, 2, 3, 4 and 5), sanctioning a teacher for every class leads to one teacher for every 4 children, which is not a viable option at scale across the state. This leads to multi-grade teaching—wherein teachers teach students from multiple classes in the same period. It leads to loss of learning time for students, as they sit idle while teachers teach the other class. Small schools may make administration harder, since district or mandal officials end up with a larger number of schools in their purview. This could result in a tradeoff between access to schooling and learning.

One way to potentially address this, as

recommended by National Education Policy, is through integration of two or more schools to form a single school of a larger size, starting with co-locating proximate schools. This approach could reduce multi-grade teaching, create better learning environments and thereby improve learning outcomes.

However, as other states have experienced, such rationalization generates challenges as well. For instance, in Rajasthan, studies suggest that the policy led to fall in enrolment, especially for students with disabilities and those from scheduled castes and tribes. Similarly, in Odisha, a study found that it led to resistance from the community. Furthermore, students may have to travel longer distances to reach schools and this may require the provision of transport facilities. Given the uncertainties about the overall effects of this approach, school rationalization could be an option for parents, communities and local Governments to request the Government to consider with appropriate support based on local conditions.

10.3.6 Initiatives for Marginalized Communities

In terms of social groups, the largest share of students are from backward classes (BC) at 49%. This is followed by the general category (23.2%), SC (16.9%) and ST (10.9%). The gender ratio among each community is consistent with the national average (~48%). The Government is committed to improving access to and quality of education for students from

marginalised and minority communities, and is implementing several initiatives to achieve that.

10.3.6.1 Post-Matric and Pre-Matric Scholarships

To enable and encourage students from marginalized communities to pursue education beyond elementary levels, the Government is providing financial assistance in the form of pre-matric and post-matric scholarships, as well as reimbursement of tuition fees. Since the state's formation, the Government

has released Rs. 15,302 crore towards scholarships and fee reimbursements of marginalised and minority communities. Of this, Rs. 2,885 crore has been spent on scholarships for SC students; Rs. 1,522 crore for ST students; Rs. 7,614 crore for BC students; Rs. 1,598 crore for EBC students; Rs. 1,681 crore for minority students; and Rs. 2 crore for students with disabilities.

10.3.6.2 Assistance for Overseas Education

The Government has also provided financial assistance up to Rs. 20 lakh to students from marginalized and minority communities to pursue

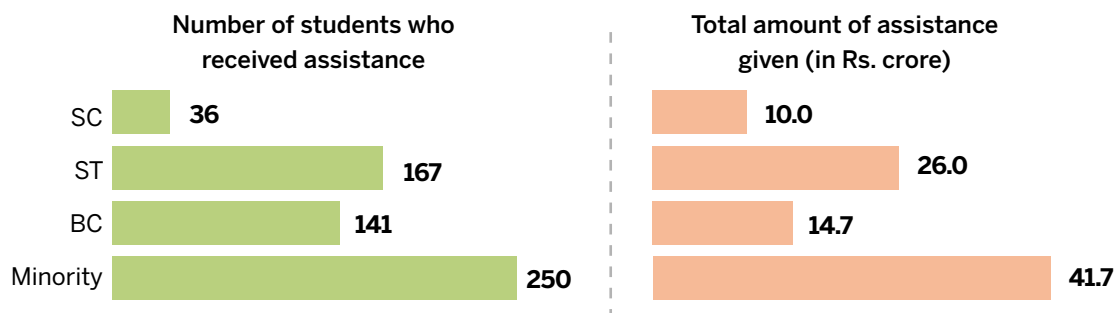
their higher education abroad (Figure 10.11).

10.3.6.3 Residential Schools

In addition to providing financial assistance to the students from marginalized communities in the form of scholarships, the Government has also established separate educational institutions and hostels for their education. Since the formation of the state, the total number of residential institutions have increased more than three-fold, an important step towards achieving universal access to education in the state (Figure 10.12).

Figure 10.11

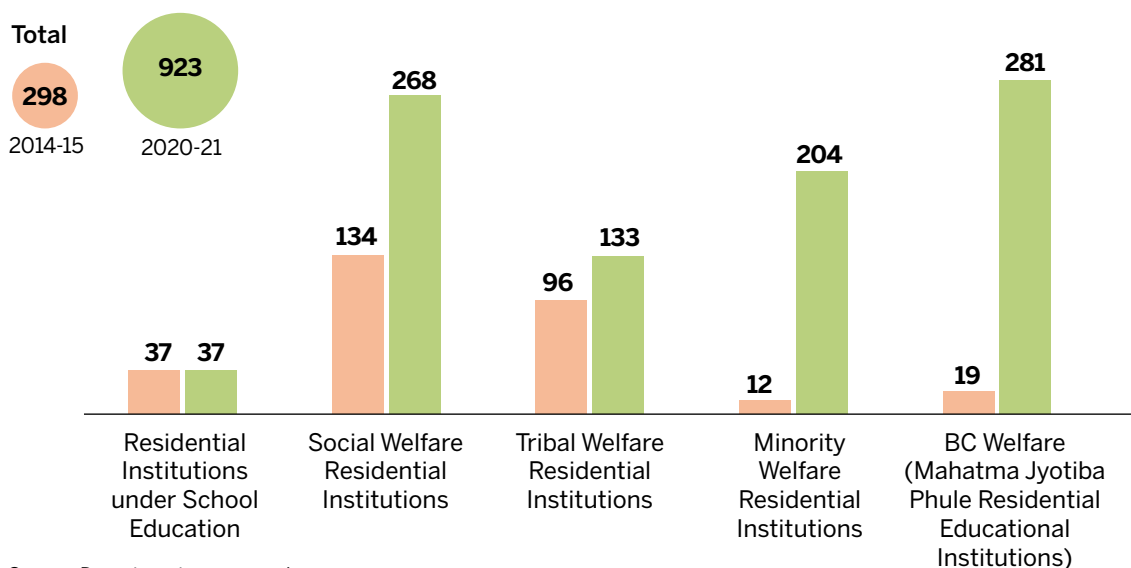
Assistance for overseas education given in 2020-21



Source: Departments concerned

Figure 10.12

Increase in residential institutions from 2014 to 2020



Source: Departments concerned

All the institutions are 100% grant-in-aid, and the entire budget is sanctioned by the Government, which spends about Rs. 1 lakh on each student per year. It follows a 'plate to slate' approach, wherein students are provided with all amenities such as tuition, books, uniforms and food. A typical school complex has laboratories, library, computer lab, playground, dormitories, and other facilities. The medium of instruction in most of these schools is English. Through these schools, the Government seeks to empower students with skills they would require to pursue higher education.

Types of Residential Schools

Telangana Residential Educational Institutions Society (TREIS): To improve education outcomes among students from socially and economically backward and rural communities, the Government established 37 residential schools and colleges which cater to 21,983 students, 57% of whom are girls.

Telangana Social Welfare Residential Educational Institutions Society (TSWREIS): The Social Welfare Department, through the Telangana Social Welfare Residential Educational Institutions Society (TSWREIS), is administering residential educational institutions (schools, junior colleges, degree colleges). At present, there are 268 institutions (of which 173 are reserved for girls) with nearly 1.5 lakh students. Of the total seats, 75% are reserved for SCs, 12% for BCs, and the rest for other minorities. In addition, there are 872 SC hostels in the state accommodating about 74,000 students from elementary to postgraduate levels.

Telangana Tribal Welfare Residential Educational Institutions Society (TTWREIS): The Society is operating 133 English-medium residential educational institutions (including schools, junior colleges and degree colleges). The Tribal Welfare Department is also running 1,426 government primary schools, and the Government of India has sanctioned the conversion of 50 of those schools into model schools. These schools would have all essential facilities, such as sports equipment and toilets.

Additionally, the department is running 136 pre-matric and 163 post-matric hostels, as well as 326 Ashram schools for ST students. Ashram schools are equipped with state of the art infrastructural and academic facilities to help ST students excel.

Telangana Minority Residential Educational Institutions Society (TMREIS): The Society is running 204 (107 boys and 97 girls) residential institutions for 91,690 minority students. Admissions into these residential schools are based on reservations (with a break-up of Muslims - 62%; other minorities - 13%; SC - 6%; ST - 5%, BC - 12%, OC/EBC - 2%). These schools provide high quality education to the students with all amenities at no cost.

Mahatma Jyotiba Phule Telangana Backward Classes Welfare Residential Educational Institutions Society (MJPTBCWREIS): The Society is running 281 residential educational institutions for students from backward classes, consisting of 261 schools (132 for boys and 129 for girls); 19 junior colleges (12 for boys and 7 for girls); and 1 degree college for women. The total sanctioned strength of all the institutions is 1.13 lakh.

10.3.6.4 Other Social Groups

The Department of School Education runs the **Kasturba Gandhi Balika Vidyalayas (KGBV)** in blocks with poor female literacy rates. These residential schools provide quality education to girls from disadvantaged communities from elementary to intermediate level. At present there are 475 KGBVs (93 English, 379 Telugu and 3 Urdu Medium) in the state, with a total strength of around 1,05,487 girls. Additionally, girls hostels have been established in 255 backward blocks in the state.

For **persons with disabilities**, the Welfare of Disabled and Senior Citizens department, in collaboration with the National Institute for Visually Handicapped, Dehradun, Government of India has established the Training Centre for Teachers of Visually Handicapped in Hyderabad. There are 5 residential schools for

persons with disabilities (2 schools for visually impaired; 3 for hearing impaired), with sanctioned strength of 830 students and 25 teachers. During COVID-19, hearing and visually impaired students from classes 8 to 10 received smartphones with internet facilities, free of cost.

10.3.7 Mid-Day Meals Scheme

The Mid-Day Meals scheme is being implemented in all government, local body, aided, NCPL (National Council for Promotion of Urdu Language) and Madrasa schools in the state. While the Government of India makes provisions for students of classes 1 to 8, the state is one of the few in the country which extends the scheme to students of class 9 and 10 as well. Recently, the Government has extended the scheme to students of junior and degree colleges in the state. Decisions regarding the menu, quality and quantity of the meal are taken with the aim to improve nutrition levels of students. This scheme has played an important role in curbing dropouts from schools. Under this scheme, 27.8 lakh students are covered.

10.3.8 Implementation of Right to Education (RTE) Act 2009

The Government of India's RTE Act guarantees free and compulsory education to every child in India. It seeks to reduce teacher-pupil ratio, provide infrastructure, open new primary schools, establish residential schools, and so on.

Initiatives and schemes by the Government under RTE include:

- 1,343 Aadhaar Enrolment Centers have been established to enrol school children and update their biometrics.
- Aadhaar biometric attendance has been implemented in 9,349 government and local body schools, KGBVs and Urban Residential Schools (URS) in 13 districts on pilot basis.

- 31 Urban Residential Schools and 7 hostels are functioning in 33 districts for children who are working or street children in urban areas.
- 28,026 out-of-school children were given special training through Non-Residential Special Training Centres (NRSTCs) or madrasas to help mainstream them into regular schools.
- 7,837 Children with Special Needs (CwSN) are provided quality teaching, physiotherapy, speech therapy and other services through the School Readiness programme in 467 Bhavitha Centres.
- 2,680 high schools in the state have computer labs under the ICT@Schools programme of the Government of India. Each lab has 10 computers and the required furniture. Teachers in these schools were trained on using these computers and developing digital content.
- 5,000 government school teachers were trained on ICT skills across the state as a CSR initiative in collaboration with Tata Consultancy Services (TCS) and CII member companies.
- 4,272 secondary schools received K-Yan (Knowledge Yantra), a computer and high-resolution projector system, enabling them to establish digital classrooms.

10.4 Higher Education

As per the Periodic Labour Force Survey 2018-19, out of the total adult population (15 years and above) in the state, 18.1% have completed secondary education, 12.4% have completed higher secondary education, 11.3% are graduates and 3.9% are postgraduates or above². All these figures are higher than the corresponding all-India average.

10.4.1 Intermediate Education

Intermediate education refers to the two years of education after a student passes class 10 and before they join college. In the state, the Commissioner of Intermediate Education is

² Periodic Labour Force Surveys (PLFS). 2020. Annual Report (July 2018 - June 2019). *National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India*. Available at <https://bit.ly/3rB9Vxv>

responsible for the administration of government junior colleges, monitoring of private aided colleges, and implementation of government policies on intermediate education.

There are 404 government junior colleges and 41 private aided junior colleges with an enrolment of nearly 1.5 lakh students in government colleges and 12,583 students in private-aided colleges. Apart from conventional courses in science, arts and commerce, 22 vocational courses are also offered in the field of engineering and technology, agriculture, home science and so on.

Significant reform measures and policy initiatives for intermediate education include free education and free textbooks for students enrolling in government junior colleges, coaching programmes for students preparing for competitive exams, career guidance cells in government junior colleges, capacity building of teachers and other staff, among others.

10.4.2 Collegiate Education

The Department of Collegiate Education is responsible for developing, administering and monitoring the

Table 10.1

Higher education indicators for Telangana and India, 2020

	Telangana	India
Gross Enrolment Ratio (GER)*	36.2	26.3
College Population Index (CPI)**	50	28
Average enrolment per college	554	693
Gender Parity Index (GPI)***	1.02	1

* Ratio of population in the age group of 18-23 years to the number of people enrolled in higher education.

** Number of colleges per one lakh eligible population (18-23 years).

*** The ratio of the number of females to the number of males enrolled.

Source: Department of Higher Education

quality of government degree colleges in the state. It also releases the grants-in-aid of private aided colleges, audits the finances of colleges, restructures old courses and introduces new ones, and so on.

For the academic year 2020-21, the number of admissions in Government Degree Colleges (GDCs) for the first year was 46,194, up from 22,000 in 2014-15—a 110% increase in admission at GDCs.

The state's higher education GER is the 9th highest in the country. It is the 8th highest for the SC category (33.7) and 7th highest for the ST category (30.7). The state has 17 public universities, two of which, Osmania University and University of Hyderabad, are included in the list of 'University with Potential for Excellence' by the University Grants Commission. The state is also home to one of the top-ranked law colleges in the country, the National Academy of Legal Studies and Research (NALSAR).

Major programmes and schemes implemented to improve collegiate education include:

- Telangana Skill and Knowledge Centres (TSKCs) are set up in colleges to train young people in skills that are relevant for the industry, so as to help them adapt in a competitive business environment. The skills include communications, analytics, computers, etc.
- District Resource Centres (DRCs) were established in all districts of the state to support government college students situated in semi-urban, rural and remote areas. They provide infrastructure and support services, such as laboratories, libraries, playgrounds, computers centres, health centres, etc. They also run programmes like coaching and career guidance.
- The Commissionerate of Collegiate Education, Telangana has initiated courses on MOOC (Massive Open Online Courses) platforms to give quality

and flexible education in the most remote parts of Telangana and to optimally utilize the human resources at GDCs. Courses are available in four subjects: Journalism & Mass Communication, Psychology, Sociology and Geography. The commissionerate has also established virtual classrooms in 99 GDCs to provide education in remote areas.

- Training programmes are conducted for lecturers working in GDCs. In the year 2020-21 (till December), a total of 1,398 teaching and non-teaching staff of GDCs were trained in different areas, including in ICT tools, to help them function online.

10.4.2.1 Rashtriya Uchchathar Shiksha Abhiyan (RUSA)

RUSA is a Government of India scheme seeking to develop higher education in the country. The Government has embarked on a strategic plan and has drafted a vision for the implementation of RUSA in the state, focusing on the triad of equity, access and quality.

Under RUSA, there has been an advent of new infrastructure and an enhancement of existing infrastructure in universities like Osmania University, Jawaharlal Nehru Technological University and GDCs. This includes e-learning facilities and virtual classrooms. The Government has also established seven residential campuses for boys and girls through Model Degree Colleges in educationally backward districts of the state. These colleges have seen a hike in student enrolment, especially from socio-economically backward communities.

While RUSA 1.0 focused on infrastructure, RUSA 2.0 has laid emphasis on other aspects such as quality enhancement and research and innovation. There

was an increase in the number of Government Degree Colleges with NAAC (National Assessment and Accreditation Council) accreditation from 29 to 64 colleges in the state and a Rs. 331 crore grant has been received so far.

10.5 Skill Development

10.5.1 Vocational Education

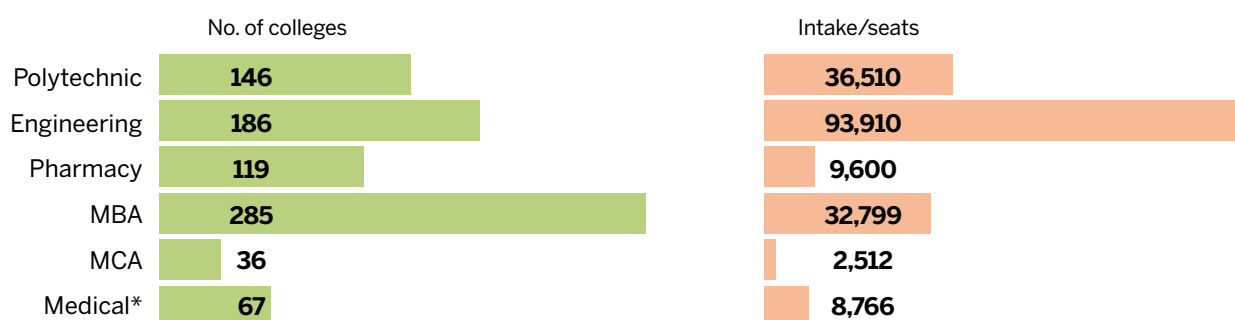
Vocational education seeks to promote employment among youth by providing them with specialized knowledge, employable skills and occupational information. Currently, 192 institutes in the state are offering vocational education and training in 12 trades: IT/ITeS; beauty and wellness; retail; tourism and hospitality; media and entertainment; healthcare; apparel; physical education and sports; agriculture; banking and finance; electronics and hardware; and multi-skilling.

Additionally, notable interventions to promote skill development in the state include:

- The Skill Development Training Programmes of SC/ST Corporations cater to educated and unemployed youth from SC and ST communities, and train them in various trades such as IT, healthcare, hospitality, aviation, banking, construction, and so on, with reputed institutions. The programme is 100% subsidized and gives participants a 75% placement assurance.
- The National Small Industries Corporation (NSIC) Technical Service Centre conducts skill development and job orientation training of educated and uneducated youth. The goal of the Centre is to enable youth to find employment or self employment and to provide the MSME sector with skilled manpower.

Figure 10.13

Numbers and intake of various professional colleges, 2019-20



*Includes medical, dental, ayurveda, homeopathy, unani and naturopathy colleges.

Source: Directorate of Economics and Statistics

10.5.2 Technical Education

The objective of the Technical Education Department is to produce technicians and engineers in the state who can contribute to industrial growth. The Department monitors polytechnics, as well as implements policies pertaining to engineering, pharmacy, MBA and MCA colleges (Figure 10.13).

Important schemes and development programmes for technical education include:

- The Government has proposed to establish 41 Skill Development Centres (SDCs) in existing polytechnics, to provide skills like communication, IT and entrepreneurship to youth in the state with an estimated cost of Rs. 30 lakh each.
- High-performing students from the state enrolled in national level institutes (such as the Indian Institute of Technology) are provided financial assistance under the Pratibha Scholarship Scheme.
- In an effort to modernize government polytechnics, funds have been sanctioned to establish e-classrooms, e-libraries, and Information and Communication Technology (ICT).
- Diploma-level students now undergo a 6-month industrial training in their final year, to enable skill development and hands-on experience.

10.5.3 Industrial Training

The Government is providing long term and short term training to youth in the state to help build employable skills. There are 289 ITIs (Industrial Training Institutes) functioning in the state. Of these, 225 are private and 64 are government institutes, and the total intake capacity is 76,928. The Government has taken steps to strengthen the institutions responsible for skilling, reskilling and upskilling youth in the state. These include measures to increase the accessibility of ITIs to cater to larger populations and ensure equity of access. The Government is also working to improve the quality of courses provided by ITIs and increase employability of students. To do this, ITIs have introduced new courses and trades which have market demand for employment. There are also placement cells functioning in ITIs to facilitate employment for trainees.

Under short term training, the State Skill Development Mission (SSDM) is implementing the Pradhan Mantri Kaushal Vikas Yojana (PMKVY). The programme is being implemented in 27 Government ITIs in the state, along with 83 private training partners and 279 training centres. So far, 1.58 lakh youth have been trained, 1,29,309 have been assessed, and 80,524 have been provided with placements. PMKVY 3.0 was launched in

January 2021, with District Skill Committees, headed by District Collectors, as implementing agencies.

To encourage entrepreneurship, six Government ITIs have been selected to establish Livelihood Business Incubators (LBIs) under ASPIRE (A Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship).

10.6 Adult Education

The literacy rate of Telangana in 2018 was 72.8% (as per the National Sample Survey Office). In 2011, the literacy rate was 66.5%, indicating an increase of 6.3 percentage points (Census 2011). The male and female literacy rates were 80.5% and 65.1% respectively. The Government is committed to increasing adult literacy rates across the state and has invested in several adult education programmes. Adult education extends educational opportunities to those adults who were unable to receive formal education at the appropriate age, but are now keen on pursuing basic education, vocational education, or other courses. Key initiatives for promoting adult education in the state are:

- The Student-Parent/Grandparent Literacy programme which requires students to make their non-literate parents and grandparents literate in their own homes. The programme involved nearly 1.4 lakh students and 1.6 lakh adults.
- The Padhna Likhna Abhyian is a basic literacy programme that seeks to enable functional literacy in 2.2 lakh people above the age of 15 who are illiterate. The programme will first be implemented in the three Aspirational Districts of Bhadradri, Jayashankar and Kumuram Bheem. It will eventually be extended to all districts.

- The Telangana Open School Society provides opportunities for continuing education to those who missed the chance to complete school education, as well as others who want to pursue school level education, through Open and Distance Learning (ODL). Currently, it offers SSC (X Class) and Intermediate (XII Class) courses.

10.7 Way Forward

In 2020, the COVID-19 pandemic significantly disrupted education across the country. The Government proactively reacted to the closure of educational institutions and initiated measures to ensure that learning continued. By leveraging ICT tools to deliver remote learning, the Government has delivered education in an accessible and equitable way. In parallel, the Government's efforts to improve education outcomes in the state have continued. It has emphasized FLN, since it is the first step in student learning. The Government is also upgrading infrastructure in schools, training teachers, providing scholarships for marginalized communities and strengthening governance.

Education is not limited to the school boundary, and the Government has also focused on preschool education, higher education, adult education, and skill development. The gains from interventions in these areas are compounded and positively impacted the all-round development (including domains like literacy, skill development, employment, industry, health, poverty alleviation and women empowerment). As schools and colleges have reopened, the path ahead is clear: accelerate the state's progress towards better learning outcomes while compensating for the loss caused by COVID-19.



CHAPTER 11

WELFARE



Key Highlights

The primary goal for the Government of Telangana is to ensure broad-based development and prosperity for all its citizens, including women, Scheduled Castes (SCs), Scheduled Tribes (STs), Backward Classes (BCs), other minorities, the elderly and the disabled. To ensure the welfare of these groups, the Government is implementing several programmes and schemes with a focus on alleviating poverty, ensuring gender equality, development and upliftment of these groups, and protecting the vulnerable (elderly and the disabled).

- To eliminate poverty and protect the vulnerable, the Government is implementing several schemes across several departments. Most notably, the Aasara pensions scheme provides an invaluable lifeline to the most vulnerable sections in society. The Government is also implementing enhanced versions of Central Government schemes, such as MGNREGS and the PDS.
- Moreover, to protect the economically weaker sections of the state from the economic shock of the COVID-19 pandemic, the Government transferred Rs. 1,500 into the accounts of the 82 lakh white ration cardholders, across the state, in April and May 2020, for a total disbursement of Rs. 2,454 crore. Migrant labourers were also given Rs. 500 each as one-time financial assistance.
- All these schemes have been greatly helpful in mitigating the impact of COVID-19 and prevented lakhs of people from entering destitution.
- On gender equality, the Government is striving to improve outcomes for women through state sponsored schemes such as Arogya Lakshmi, Women Welfare Centers, the State Commission for Women, and through centrally-assisted flagship schemes such as Mahila Shakti Kendras (MSKs), the Scheme for Adolescent girls (SABLA), and the Integrated Child Development Services (ICDS). In addition, nurturing self-help groups continues to be an important focus.
- To promote the welfare of SCs/STs/BCs, and other minorities the Government is implementing targeted schemes in priority areas, such as marriage assistance (Kalyana Lakshmi Scheme/ Shaadi Mubarak); education (e.g. establishing separate education institutions); skill development and employment generation; and rights protection.



11.1 Introduction

Since its formation, the state has enjoyed significant economic growth. To ensure that the benefits of this growth are distributed equally to all its citizens, the Government implements programmes and schemes that promote inclusive economic growth and protect the most vulnerable sections in society. Specifically, the Government is committed to improving the welfare of the socially and economically weaker sections of the society, i.e., SCs, STs, BCs, other minorities, women and children, disabled persons, and senior citizens. By focusing on these sections of society, the Government aims to improve the quality of life of all its citizens and drive broad-based development.

11.2 Poverty Alleviation in Telangana

Alleviation of poverty is the foundation of welfare and an important objective for the Government. The Government has introduced several schemes and initiatives through various departments to help eradicate poverty and protect the most vulnerable sections in society.

In its endeavour to eradicate both urban and rural poverty, and ensure social security, the Government is implementing various self employment and economic

support schemes. Specifically, the state level agencies such as the Society for Elimination of Rural Poverty (SERP) and Mission for Elimination of Poverty in Municipal Areas (MEPMA) are implementing various programmes to strengthen and nurture self-sustainable institutions for the poor, such as formation and organization of Self-Help Groups (SHGs), Support to Urban Street Vendors (SUSVs), skill development, Self Employment Programmes (SEPs), and Social Mobilization & Institution Development (SM&ID). The Government is also proactively implementing national welfare schemes such as the Public Distribution System (PDS) and the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).

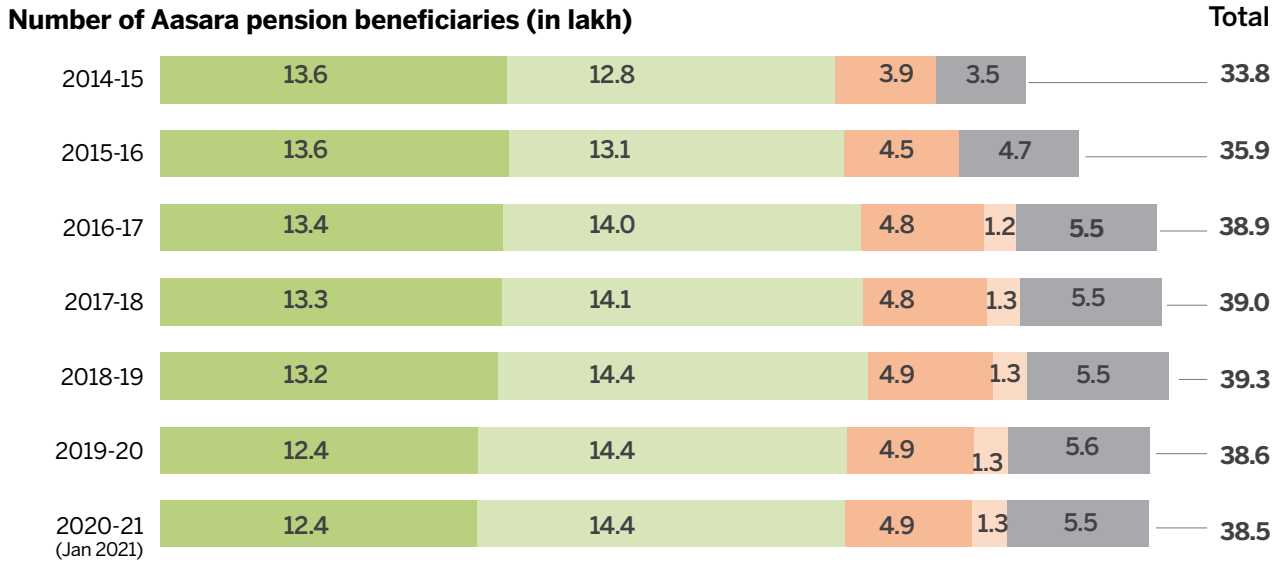
11.2.1 Aasara Pensions

The Government, as part of its welfare measures and social safety net strategy, has introduced the Aasara Pensions scheme to ensure a secure life with dignity for the poor. The Aasara Pension scheme is meant to protect the most vulnerable sections of society, particularly the old and infirm, disabled persons, HIV patients, widows, single women, incapacitated weavers and toddy tappers, who have lost their means of livelihood with growing age. Further, the scheme also provides financial assistance to 1.3 lakh single women. In 2020-21, Rs. 8,121 crore has been spent under the scheme so far.

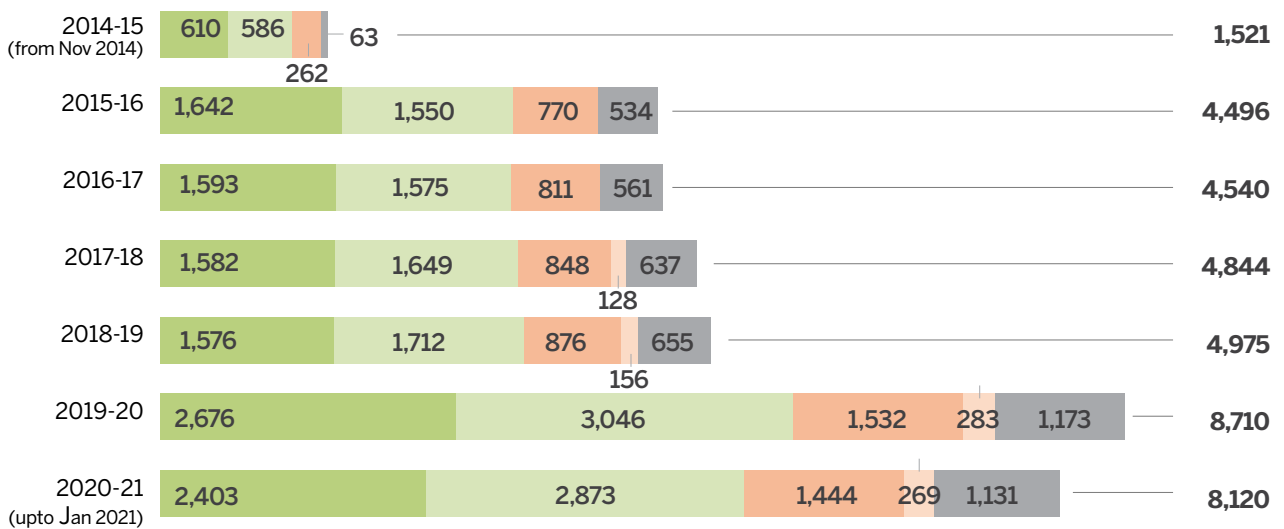
Figure 11.1

Details of Aasara pensions

Old age Widow Disabled Single women Others



Expenditure under Aasara pension scheme (in Rs. crore)



Source: Society for Elimination of Rural Poverty (SERP), Department of Rural Development

In order to serve a wider section of the population, the Government has reduced the pensionable age limit for old age pensions from 65 years to 57 years. Currently, there are 39 lakh beneficiaries under the scheme, comprising mostly of old age pensioners, widows and

disabled pensioners (Figure 11.1). Since June 2019, the monthly pension amount has been enhanced to Rs. 2,016 from Rs. 1,000 for all categories of pensioners. For disabled pensioners, the monthly pension has been increased to Rs. 3,016 from Rs.1,500.

Aasara pensions are either transferred directly to beneficiary bank accounts or paid to beneficiaries at post offices after biometric authentication. In the case of disabled or sick pensioners, Aasara pensions are also paid manually through the Panchayat Secretary or Bill Collector. Recently, the Government has integrated Artificial Intelligence (AI) and big data through its Real Time Digital Authentication of Identity (RTDAI) platform to identify the pensioners.

Beneficiaries who are unable to visit government offices or submit certificates for proof of life, can register on the T-App and use Pension Life Certificate through Selfie (PLCS) option. The PLCS verifies that the person is living, matches with the photograph in the database and issues a certificate. In addition, the Government's

promotion of T-App has been beneficial for promoting inclusion, as it allows citizens to complete formalities without facing any administrative friction.

11.2.2 Public Distribution System (PDS)

Under the National Food Security Act, the Government has been proactively implementing the Public Distribution System (PDS). Through a network of 16,990 fair price shops (FPSs), the Department of Civil Supplies distributes essential commodities to priority households and Antyodaya households entitled to receive food grains at subsidized prices as per their eligibility (Table 11.1). There are currently around 281 lakh beneficiaries (including those in Annapurna scheme) served by the PDS.

Table 11.1

Rice distribution schemes being implemented by the Government of Telangana

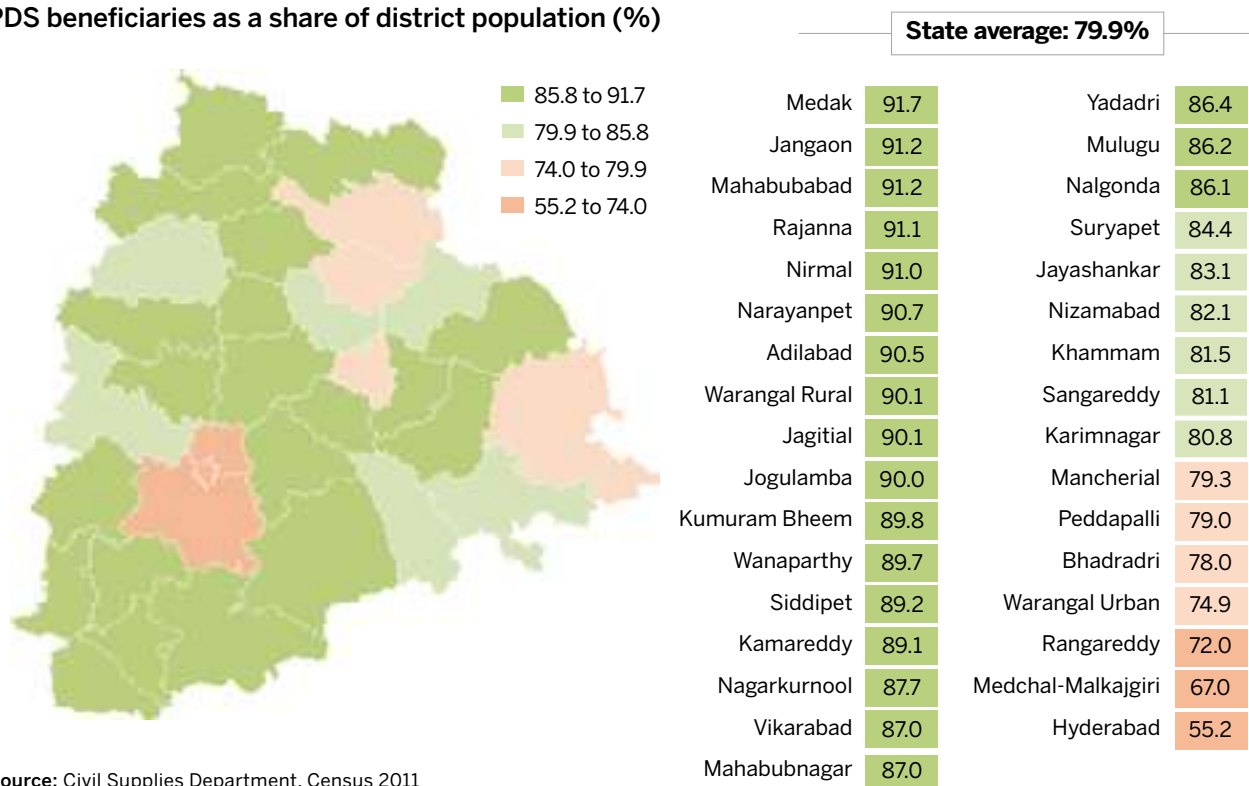
Name of the scheme	Beneficiary details	Eligibility criteria	Price	Scale of distribution per month
Food Security Cards	81.8 lakh beneficiaries	Issued to the BPL families	Rs 1 per kg	6 kg per member without any ceiling on the number of members in the family.
Antyodaya Anna Yojana (AFSC) cards	5.6 lakh households	Issued to the poorest of the poor, primitive, tribal, destitute/ widows, etc.	Rs 1 per kg	35 kg per card
Antyodaya Annapurna (AAP)	5,809 cards	Issued to the indigent old/ senior citizens	Free of cost	10 kg per beneficiary
SC/ST/OBC Hostels	8.5 lakh beneficiaries	SC/ST/OBC students residing in Government Welfare Hostels	Rs 1 per kg	15 kg per pre -matric inmates / 18 kgs per post -matric inmates
Mid-Day-Meals	22.7 lakh beneficiaries	Issued to students studying in Government schools	Free of cost	1st to 5th - 100 grams, 6th to 10th- 150 grams
Anganwadi centres	10.8 lakh beneficiaries	Issued to children below 6 years of age and pregnant /lactating women	Rs. 4,842 per MT	As per requirement

Source: Civil Supplies Department. Census 2011

Figure 11.2

PDS beneficiaries in the state (as on November 2020)

PDS beneficiaries as a share of district population (%)



Source: Civil Supplies Department, Census 2011

11.2.2.1 Response to COVID-19 under PDS

During the COVID-19 lockdown period, the Government made several efforts to ensure food security for the citizens of the state, and Rs. 1,103 crore was sanctioned for ration support for this purpose. Between April and June 2020, 12 kgs of rice was distributed per person to all the food security card holders, free of cost. One kg of redgram dal was also distributed free of cost for 3 months to all the cardholders. Thereafter, rice was distributed at 10 kg per person free of cost for five months, from July to November 2020. The Government also transferred Rs. 1,500 into the accounts of the 81.9 lakh white ration cardholders across the state in April and May 2020, by sanctioning an amount of Rs. 2,628 crore. The Government also distributed 12 kgs of rice/atta per person and 1 kg of redgram dal/chana to 6.5 lakh migrant labourers working in the state in May and June 2020, free of cost, and also supported them

with cash assistance of Rs. 500. In order to support the migrant workers, the Government has released an amount of Rs. 107 crore. In addition, Rs. 17 crore was paid to Railways for transporting more than 2 lakh migrant labourers to their native places.

To maintain social distancing and prevent COVID-19 transmission, the Government arranged various provisions at Fair Price Shops (FPS). Third party biometric authentication was introduced to replace biometric authentication for individual cardholders. To prevent crowding, a token system for cardholders was put in place along with necessary sanitation measures (e.g. arranging soaps, water, sanitizers, etc). The Government incurred an additional expenditure of about Rs. 743 crore under PDS to support the poor in distress during the lockdown period of COVID-19 in addition to the regular subsidy of about Rs. 2,600 crore per annum.

11.2.2.2 Technology in PDS

Recognizing the power of technology to improve service delivery and to prevent leakages, the Government has invested in several tech-related measures to improve PDS functioning, such as the adoption of Online Procurement Management System (OPMS) for paddy procurement, End-to-End Computerisation of the PDS, and GPS Tracking for effective transportation. The entire system of Food Security Cards has been digitized while all other digital services like the generation of dynamic key register, which allows online allocation of essential commodities at various levels, have been made available in all the 33 districts, covering all FPSs. With the latest technology, a Command & Control Centre has also been established to track the movement of vehicles involved in transportation of PDS commodities by installing GPS trackers on them, a facility that has also been extended to all the State offices through video walls.

11.2.2.3 Other Distribution Schemes

Since January 2015, the Government has been supplying Sanna Biyyam (fine rice) to boarders at Government Welfare Hostels and for the Mid Day Meals (MDM) Scheme being implemented in schools. Around 22.7 lakh students are being covered under the MDM scheme. The Government is also supplying rice to 10.8 lakh beneficiaries (including children below 6 years of age and pregnant/lactating women) through Anganwadi centres under the Integrated Child Development Scheme (ICDS). In 2019-20, 31,000 MTs of rice was allotted to the ICDS.

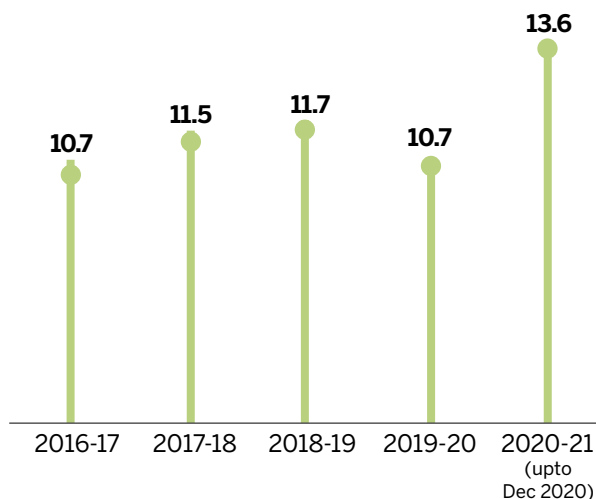
11.2.3 Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)

MGNREGS remains one of the biggest poverty alleviation and welfare programmes in India, guaranteeing 100 days of unskilled wage employment to a rural household in a financial year. Aligned with this national mission, the state has emerged as a front-runner in implementing the scheme. MGNREGS

Figure 11.3a

Number of person-days generated under MGNREGS (in crore)

There has been an increase in the number of person-days generated in 2020-21



Source: MGNREGS dashboard

is being implemented in 12,770 Gram Panchayats covering 540 mandals of 32 districts with 53.4 lakh job cards issued to 1.1 crore wage-seekers.

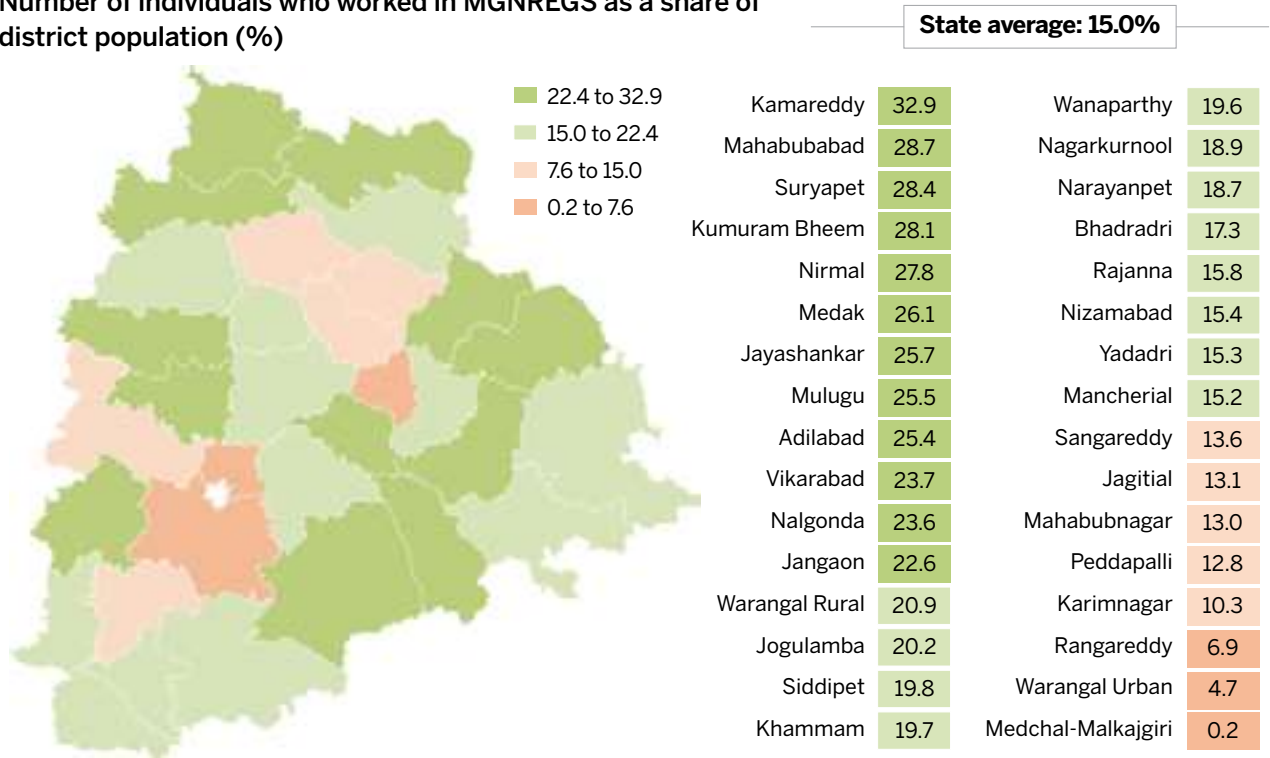
During 2020-21, around 52 lakh wage-seekers belonging to 30 lakh households reported for work and 13.6 crore person-days were generated. MGNREGS was especially important over the last year for supporting rural households pushed into distress due to the pandemic. Demand for work under MGNREGS increased significantly in 2020-21. As of December 2020, there has already been a 27% increase in the number of person-days generated (13.6 crore person-days) compared to the entire 2019-20 period (10.7 crore person-days) while 2.1 lakh have completed 100 days of wage employment.

Within the state, there is significant variation in MGNREGS participation. For instance, in 2020-21, 3.2 lakh individuals in Kamareddy have worked in MGNREGS, which accounts for roughly 33% of the district's population - the highest share in the state (see Figure 11.3a/11.3b).

Figure 11.3b

Participation in MGNREGS as a share of district population in 2020-21

Number of individuals who worked in MGNREGS as a share of district population (%)

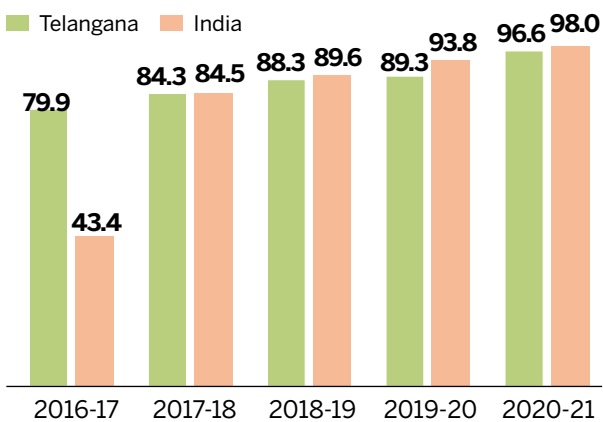


Source: MGNREGS portal, Census 2011
Note: Data upto December 2020

Figure 11.4

Share of MGNREGS payments made within 15 days (%)

Almost all MGNREGS payments in the state are made within 15 days



Source: MGNREGS dashboard
Note: Data upto December 2020

The year 2020-21 also saw an increase in the percentage of person-days generated for SC and ST wage-seekers as a share of total person-days in Telangana, compared to the previous year. This was possible due to the efforts of the state government towards employment generation during COVID-19. In 2020-21 (as of December 2020), Rs. 3,619 crore has been spent under the scheme.

In terms of wages, the average wage received by beneficiaries in the state has also increased steadily. The Government strives to ensure that all beneficiaries receive payments promptly after their work. In 2020-21, 97% of all wage payments were made within 15 days of work completion (see Figure 11.4).

11.2.4 Housing

Housing is a crucial determinant of the quality of life for citizens of a state. The Government is striving

to ensure that its citizens have access to affordable housing, despite their economic situation. According to the National Sample Survey 2017-18, on household facilities, 91% of homes in the state are pucca structures (i.e., houses with solid walls, roofs and floors) which is more than the India average (83%) (see Figure 11.5).

11.2.4.1 Double Bedroom (2BHK) Housing Programme

A flagship programme of the State Government is the Double Bedroom Housing scheme, introduced in October 2015, with a view to provide dignity to the poor. Under this scheme, citizens are entitled to 100% subsidized housing, i.e., there is no contribution from beneficiaries—a marked shift from credit-linked subsidy-based schemes (such as the Government of India’s Pradhan Mantri Aawas Yojna (PMAY)). The

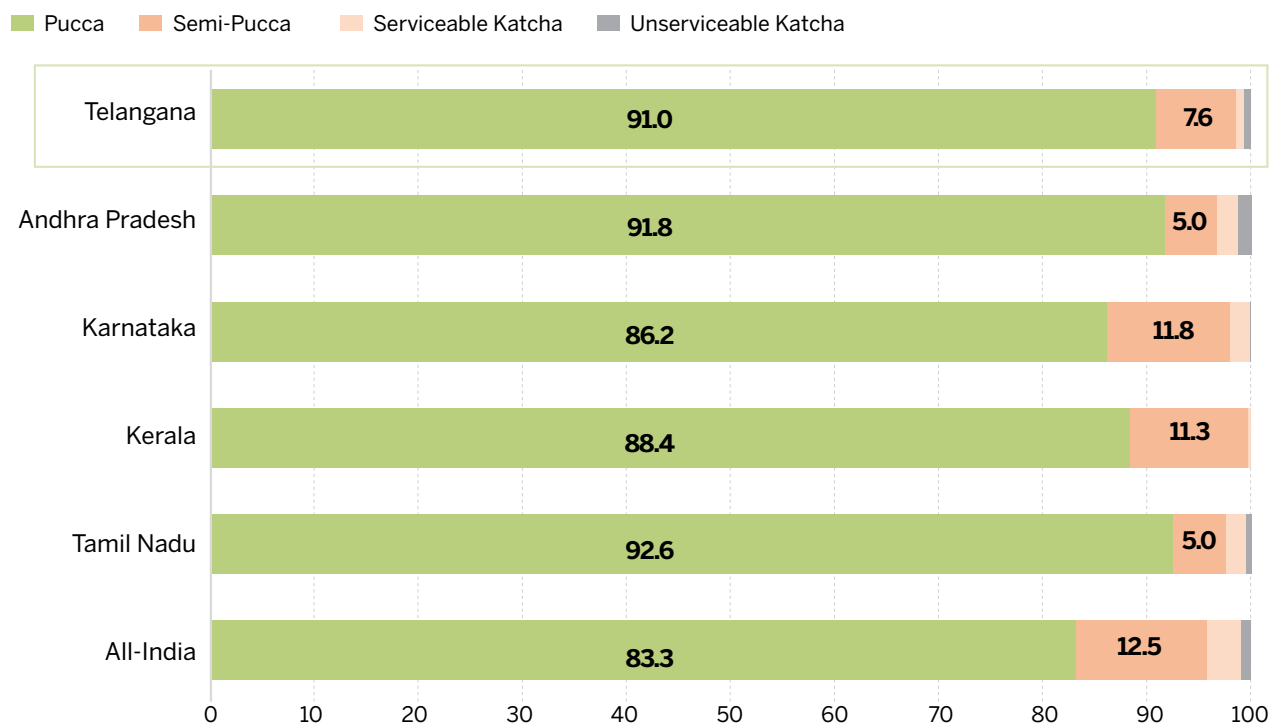
scheme provides houses with 560 square feet plinth area, which includes two bedrooms, a hall, a kitchen and two bath-cum-toilets to the beneficiaries. In rural areas, the house is an independent structure (with a plot size of 125 sq yards, or 1,125 sq ft) while in urban areas, it is a flat in multi-storey buildings. This house acts as a sound economic asset with a hygienic living environment for the beneficiary, contributing to the socio-economic growth of the household and the community.

As of December 2020, construction of around 54% of all sanctioned houses are either completed or nearing completion. So far, a total of Rs. 9,468 crore has been spent on the programme.

To ensure transparency and accountability, the Housing Department developed the Online Project Monitoring System to monitor physical and financial

Figure 11.5
Status of housing in Telangana

Type of house structure among rural and urban households (%)



Source: NSS Report No. 584: Drinking Water, Sanitation, Hygiene and Housing Condition in India

Box 11.1

Impact of MGNREGS on poverty and rural welfare

MGNREGS has emerged as an important social protection programme for the poor and vulnerable across India. Several studies have shown that the scheme leads to significant gains in household income and reduction in poverty. For instance, according to a 2015 study released by the Ministry of Rural Development and the National Council of Applied Economic Research, MGNREGS reduced poverty by 32% and prevented 14 million people from falling into poverty in the country. Another study of MGNREGS in erstwhile Andhra Pradesh found that improving the programme's implementation increased low-income households' earnings by 13% while overall poverty fell by 17% (Muralidharan et. al., 2020).

Importantly, MGNREGS can positively impact the overall rural economy. In the Andhra Pradesh study, better-implemented MGNREGS also led to a significant increase in market

wages as private employers were compelled to raise wages to attract workers, thereby increasing private employment, which in turn had a multiplier effect on overall economic activity. Given these powerful effects, the Government is committed to strengthening MGNREGS implementation in the state.

References

Desai, S., Vashishtha, P. and Joshi, O., (2015). Mahatma Gandhi National Rural Employment Guarantee Act: A Catalyst for Rural Transformation. New Delhi: National Council of Applied Economic Research.

Muralidharan, K., Niehaus, P. and Sukhtankar, S., 2020. General equilibrium effects of (improving) public employment programs: experimental evidence from India. UC San Diego. Available at: <https://bit.ly/3eAZVki>

progress of household construction. This initiative has been nationally recognized and replicated. In addition, the Engineering Department executing the work is required to follow regular department quality control procedures and submit periodic reports to the District Collector. The programme has also won a number of awards, including the HUDCO Design Award 2017 and the PMAY-U Award for excellent performance in e-governance in the housing sector.

To ensure equity in the scheme, beneficiaries were selected in line with the composition of SCs, STs and minorities in each Assembly Constituency and district as a whole. This meant that in rural areas 50% of beneficiaries were SC/ST and 7% belonged to minority sections. While in the urban areas, 17% beneficiaries were SC, 6% were ST, 12% were minority and 65% were others. There was also 2% reservation given to ex-servicemen and widows of ex-servicemen, and 5% to persons with disabilities.

11.2.5 Role of Welfare Schemes in the State to Mitigate COVID-19

One of the biggest impacts of the COVID-19 lockdown was on household incomes and consumption. Given so many households (rural and urban) live below or precariously close to the poverty line in India, there was significant welfare loss because of the lockdowns. Since the lockdown hurt urban activity more, the poor in the urban areas of the state were the most vulnerable. However, the extensive safety nets and policies (such as the additional PDS benefits), the financial assistance, medical care, etc., provided by the Government ensured that the overall impact of this welfare loss was mitigated.

11.3 Gender Equality in Telangana

The Government is especially focussed on bringing gender reforms in the state to ensure that women are equally empowered in all respects.

11.3.1 Policies to Promote Gender Equality

The Government is taking proactive measures for women's welfare and empowerment by implementing schemes such as Arogya Lakshmi, Women Welfare Centres, the Mahila Shakti Kendras Scheme, UJJWALA scheme, the Beti Padhao Beti Bachao Scheme, as well as setting-up the State Commission for Women. The Government is also implementing 33.33% reservation for women in admissions in educational institutions and public sector recruitment. Similarly, under the newly legislated local bodies' acts, 50% reservations have been provided for women. Accordingly, 67,486 (50.7%) of elected representatives in Panchayat Raj Institutions are women.

11.3.1.1 Self Help Groups (SHGs)

One way to promote women empowerment is by encouraging collectivization of women belonging to economically backward classes. For this reason,

the Government has been committed to building and nurturing SHGs of women. There are nearly 4 lakh SHGs with 43.4 lakh members in the state. The Government believes that social mobilization should start with empowering the most vulnerable sections of the society and as a result there are 9.2 lakh SC, 5.9 lakh ST, and 23.5 lakh BC members in SHGs.

The Government is facilitating bank linkage for SHG members by promoting diversified livelihoods to augment incomes under the SHG-Bank Linkage Programme. During 2020-21, an amount of Rs. 7,058 crore was disbursed to around 2.3 lakh SHGs (as of December 2020). The Government is also promoting StreeNidhi Credit Cooperative Federation Ltd and the Mandal Samakhyas to supplement credit flow from the banking sector. StreeNidhi provides timely and affordable credit to poor SHG members as part of the overall strategy of SERP for poverty alleviation. SHGs are able to access credit easily from StreeNidhi by just using their mobile phones and this prevents SHGs from borrowing from other sources at usurious rates of interest. StreeNidhi is in a position to extend credit to the SHGs even in far flung areas of the state in 48 hours to meet credit needs for exigencies like health, education and other income generation needs like agriculture, dairy and other activities.

To empower women and augment their incomes, the Government is also promoting various agriculture-related activities, such as paddy procurement, farmer producer group (FPG) formation, and livestock rearing through SHGs. The number of Paddy Procurement Centres operated by SHGs has been increased from 1,586 in 2014-15 to 1,942 in 2020-21, enabling farmers to receive remunerative prices or the minimum support price at their doorstep.

Apart from this, the Government has been encouraging non-farm livelihood through various measures, such as setting up the Sale of Articles of Rural Artisans Societies (SARAS) platform. The Government, through WE Hub, is identifying suitable SHG women entrepreneurs who wish to scale up

their business activities; about 52 women enterprises (individual and group) have been selected through a sequence of screening processes and are currently being supported on all aspects of their business, from product standardization to marketing support.

11.3.1.2 One Stop Centres (Sakhi Centres)

The Department of Women Development and Child Welfare (WDCW) has been working towards women's all-round health and safety through various projects. The One Stop Centres (also known as Sakhi) provide an integrated range of services to women affected by violence and handled 11,276 cases in 2020-21. Out of these cases, 8,960 were provided psycho-social counselling, 3,763 were given legal counselling, 2,129 were provided emergency shelter, 1,019 were given medical aid, 1,000 were provided police support, and 593 were referred to Swadhar Greh. The state's Women Helpline (181) initiative received more than 1.5 lakh calls which were directed to the Sakhi helplines.

11.3.1.3 SHE Teams

The Women Safety Wings monitor all the SHE-Bharosa centres by ensuring safety and security of women and deals with offences like eve-teasing, stalking, harassment against women in public places, work places, educational institutions, residential areas or social media. At present, there are 331 SHE teams working in the state.

11.3.1.4 T-she Box

To combat sexual harassment against women, the Government also established T-she Box, a mobile and web app allowing women to file complaints of sexual harassment at workplace and monitoring the complaints till their redressal. Till date, 4,036 internal committees and 20 local committees have been registered on this website. Women Development & Child Welfare Department also set up a new home for trafficked victims in Hyderabad.

11.3.1.5 Mahila Shakti Kendras (MSKs)

The two centrally assisted flagship schemes are Mahila

Shakti Kendras (MSKs) and Scheme for Adolescent Girls (SABLA). The MSK Scheme provides an interface for rural women to approach the Government for availing their entitlements and for empowering them through awareness generation, training and capacity building. Meanwhile, under SABLA, adolescent girls who are out of school are provided with skill development training such as life skills, home skills, health, nutrition, importance of education, awareness about rights and entitlements, as well as access to public services. The scheme also covers the nutritional needs of adolescent girls.

11.3.1.6 COVID-19 Response

The Government recognized that the COVID-19 pandemic posed critical challenges to the health and safety of women, in terms of access to essential commodities and spaces, especially during the lockdown months. Thus, the Government took special initiatives to mitigate this. This included free supply of sanitary napkins to ensure menstrual hygiene for women and children residing in state institutes and free supply of emergency kits to migrant women and children. The Government also constructed temporary toilets for women in the large congregations of migrant labourers in Medchal-Malkajgiri district. The Government has trained SHGs in the preparation of masks and other PPE kits. This has helped greatly in improving SHG members' earnings while enabling local production and distribution of masks and PPE kits at affordable costs.

11.4 Welfare of Scheduled Castes, Scheduled Tribes, Backward Classes and Other Minorities

The significant presence of SCs, STs, BCs and other Minorities in the state necessitates the Government implementing various schemes and programmes for their upliftment, development and welfare.

11.4.1 Policies to Improve the Welfare of SCs, STs, BCs and Other Minorities

Several exclusive policy measures have been introduced by the Government towards improving the quality of life for SCs/STs/BCs and other minorities. These policies aim to target all aspects of welfare including education, self-employment and skill development. After the formation of the state, to give priority to the development of SCs and STs, the Government enacted the Scheduled Castes and Scheduled Tribes Special Development Fund (Planning, Allocation and Utilization of Financial Resources) Act, 2017. As mandated by the Act, allocation of funds in the state budget to SCs and STs should be in proportion to their population in the state. Under the Act, the unspent balances in a financial year are to be spent during the next financial year. The Government has established a dedicated online portal for the effective and real-time monitoring of the progress of the fund's utilization and outcomes.

In addition to extending benefits under the schemes and programmes executed by various departments in the state, there are separate departments and corporations to implement schemes exclusively for the benefit of SCs, STs, BCs and other minority communities. The details of the major schemes are:

11.4.1.1 Educational Support

To increase access to education and improve the career prospects of these communities, the Government has established exclusive residential educational institution societies. There are a total of 923 residential institutions in the state in 2020-21, a three-fold increase from 298 in 2014-15. There are 37 institutions under the 'Telangana Residential Educational Institutions Society' (TREIS); 268 under the 'Telangana Social Welfare Residential Educational Institutions Society' (TSWREIS); 133 under 'Telangana Tribal Welfare Residential Educational Institutions Society'

(TTWREIS); 326 Tribal Welfare Ashram Schools; 281 under 'Mahatma Jyothiba Phule Telangana Backward Classes Welfare Residential Educational Institutions Society' (TBCWREIS); and 204 under 'Telangana Minorities Residential Educational Institutions Society' (TMREIS).

In addition to these residential educational institutions, separate welfare hostels are also being established and maintained by these departments. Students in all these residential educational institutions and hostels are provided with qualified teachers, instruction in English, nutritious food and access to facilities like computers, digital classrooms and science labs.

Eligible students are also being given pre- and post-matric scholarships and reimbursement of tuition fees. The Government provides special coaching to merit students for admissions into institutions of higher learning, such as IITs, IIMs and NITs, and for competitive examinations of TSPSC, UPSC and other public sector organizations. For eligible candidates aspiring to study abroad, the Government is providing coaching support for exams (such as the GRE, GMAT, TOEFL and IELTS) and also providing financial assistance upto Rs. 20 lakhs. Overseas scholarships to SCs and STs are given under 'Ambedkar Overseas Vidya Nidhi', BCs under 'Mahatma Jyotiba Phule BC Overseas Vidya Nidhi' and Minorities under 'Chief Minister's Overseas Scholarship Scheme' (see Education chapter for more details).

11.4.1.2 Leveraging Technology in Residential Educational Institutions

Over the past few years, the Social Welfare Residential Society has made rapid strides in improving their efficiency through technology. Today, all the 134 institutions in the Society are part of an intranet with assured connectivity. The Society also has its own email service and website. Attendance of students and staff as well as the progress of students are monitored every day through Student Academic Monitoring Service (SAMS). Similarly it has enabled headquarters

to monitor the progress made by every student in every institution. All the staff received salaries online through the Online Finance Management System (OFMS).

During the COVID-19 pandemic, the Society has successfully experimented with virtual classrooms, where it organizes lectures everyday to the students of 269 Schools through state-owned T-SAT. Broadcasted sessions are recorded and are made available on demand for student's availability post class hours. In addition, the e-studio of the Tribal Welfare Department is providing the Academix App, a tele-learning app for 3rd to 10th class students, made available in every nook and corner of the state.

11.4.1.3 Economic Support Schemes

The Government has introduced several schemes to eradicate poverty among these sections by creating economic stability through livelihood activities, self-employment and skill development. These economic support schemes include:

Sheep Distribution Scheme

The Government has implemented the Sheep Distribution Scheme to the Yadava and Kurma communities in order to support their livelihoods, and to strengthen the rural economy. The scheme targeted 4 lakh beneficiaries with a proposed outlay of Rs. 5,000 crore. So far, 76.9 lakh sheep have been distributed to 3.7 lakh beneficiaries.

Entrepreneurship Development (T-PRIDE)

To support SC and ST entrepreneurs, special incentives are given under the Government's flagship T-PRIDE (Telangana State Program for Rapid Incubation of Dalit Entrepreneurs) scheme. Eligible beneficiaries receive a subsidy of 35% on fixed capital investment (subject to a maximum limit of Rs. 75 lakh for Micro & Small Enterprises); 100% reimbursement of stamp duty and transfer duty; 50% reimbursement on land

cost in Industrial Estates/Industrial Parks; 50% reimbursement of skill upgradation and training costs; among other benefits. So far, 13,744 SC entrepreneurs have been provided incentives worth Rs. 616 crore and 10,749 ST entrepreneurs have been provided incentives worth Rs. 497 crore. In addition to T-PRIDE, the CM ST Entrepreneurship and Innovation Scheme, launched in 2017, promotes tribal entrepreneurs through an incubation centre for knowledge linkages.

Self Employment, Skill Development and Skill Upgradation with Placements

Multiple skill development training programmes are conducted for SCs, STs, BCs and other minority sections in various areas like transport, IT, healthcare, hospitality, housekeeping, aviation, banking and construction. These programmes are run with a 100% subsidy component for beneficiaries to secure gainful employment and build employable skills. Some of the beneficiaries are trained at reputed institutions like the National Institute for Micro, Small and Medium Enterprises, National Institute of Tourism and Hospitality Management, and National Academy of Construction. In addition, under these programmes, educated and unemployed youth were provided free training in IT and professional skills through government and private training institutions to help them secure employment opportunities and become self employable.

For setting up of self-employment units and creating income generating activities, bank-linkage scheme is extended to the eligible candidates and the subsidy amount is also raised up to 80%.

To support occupational-based activities, BC Corporations are providing necessary skill development and upgradation along with modern equipment suitable for their occupations (such as washing machines, saloon kits, etc.) to enhance their earnings and reduce the drudgery associated with their work.

To provide self employment under the driver-cum-owner scheme, assistance is being provided to the eligible candidates to improve their driving skills and to purchase vehicles through bank linkage. So far, 3,105 vehicles have been provided with 60% subsidy under the scheme to the beneficiaries of various communities.

11.4.1.4 Other Exclusive Schemes for Socio-Economic Development

In order to reduce social inequalities, the Government is providing other measures such as financial assistance to girls for marriage and free power supply to SC and ST households up to 101 units per month.

Kalyana Lakshmi / Shadi Mubarak (Marriage Assistance)

The Government launched a novel scheme known as Kalyana Lakshmi / Shaadi Mubarak in 2014-15 for providing financial assistance for the marriage of girls from SC, ST, and other minority communities and from 2016-17 onwards for BCs and EBCs as well (see Table 11.2). At present, under this scheme, a one-time financial assistance of Rs. 1,00,116 is provided to the bride's family at the time of marriage to meet marriage-related expenses. Assistance under the scheme is provided to all the resident girls of the state, over 18 years of age, belonging to these sections, as long as the combined annual income of their parents does not exceed Rs. 2 lakh. The scheme greatly relieves the financial burden of the bride's parents and it also curtailed child marriages.

Table 11.2

Performance of Marriage assistance Schemes (Kalyana Lakshmi and Shadi Mubarak) in terms of beneficiary numbers and expenditure (in Rs. crore)

	Scheduled Castes		Scheduled Tribes		Backward Classes		Minorities	
	Beneficiaries	Expenditure (in Rs. Crore)	Beneficiaries	Expenditure (in Rs. Crore)	Beneficiaries	Expenditure (in Rs. Crore)	Beneficiaries	Expenditure (in Rs. Crore)
2014-15	5,105	26	2,482	13	No Scheme		5,443	28
2015-16	30,568	156	17,354	89	No Scheme		27,695	141
2016-17	22,455	115	13,473	69	34,912	181	23,521	120
2017-18	25,224	166	16,326	109	57,503	380	24,944	162
2018-19	30,607	274	16,500	147	46,250	691	34,257	292
2019-20	34,598	342	24,104	237	71,162	619	36,324	356
2020-21	15,604	156	10,048	100	88,552	881	16,438	143
Total	1,64,161	1,235	1,00,287	764	2,98,379	2,752	1,68,622	1,112

Source: Respective Welfare Departments (SC, ST, BC and Minorities)

Monitoring and Implementation of the Acts meant for SCs and STs:

To ensure social justice, the Government is monitoring the implementation of the issues concerning the Scheduled Castes Special Development Fund (SCSDF), Protection of Civil Rights Act, 1955 (PCR) and Prevention of Atrocities Act, 1989 (POA), Jogins/Devadasi Prohibition Act, Manual Scavenging Prohibition Act and Rule of Reservation (RoR).

The Government of India enacted The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, with the aim to recognize and record the rights of forest dwellers who have been residing and depending on the forest for generations for their bona fide livelihood needs, without any recorded rights. As per the Act, tribals are entitled to forest rights if they are in possession of any forest land as individuals or as community (as on December 2005). Further, other traditional forest dwellers who have been in possession of land since the last 75 years can also be given rights under the act. Title certificates have been issued to 94,774 individuals covering 3 lakh acres and 721 community titles were distributed covering 4.5 lakh acres.

Protection and Development of Culture and Religion

In order to preserve tribal culture, the Government has established Tribal museums in Jodeghat, Medaram, Bhadrachalam and Mannanur. To promote self identity of tribals, their festivals and Jataras are promoted by both the State and Central Governments. These festivals include Medaram Jatara, Jangubhai Nagoba Jathara, Gandhari Maisamma, Santh Sevalal Jayanthi Teej, Bourapur Sivaratri Jathara, Phulaji Baba Jayanthi Siral, Dandari, Bheemayak, etc.

The Government has also allotted lands for the religious shrines of minority communities and also providing assistance to construct and renovate religious shrines. Land was allotted for the Christian Bhavan at Kokapet while acquisition of land for Sikh Bhavan is in progress. Works on the Macca Masjid heritage centre and the modernization of Jahangir

Peeran Dargah are in progress, while construction of Jamia-Nizamia Auditorium is completed. In addition, assistance is also provided for citizens undertaking religious pilgrimage to Haj and Jerusalem.

11.4.1.5 COVID-19 Response

Despite the many hurdles during COVID-19, the most vulnerable sections in society were protected by the Government with its continued efforts in delivering existing social protection schemes.

All the social welfare pre-matric hostels were closed in view of the pandemic. In the absence of regular teaching, alternative methods were adopted through digital, online and TV channels. For those students who were allowed to stay in hostels, awareness campaigns were implemented on social distancing, washing hands, refraining from touching face, eyes, nose and mouth with unwashed hands, regular sanitization was done in the hostel premises, and a healthy diet was given. Sick boarders were isolated immediately and medical attention has been given with a special diet under the supervision of medical professionals.

To address the food security of Tribals during the lockdown period, in addition to the regular supply of rice, the Chenchus, Kolams and Thotis were provided with a kit with 13 items worth Rs. 562 by Project Officers of the Integrated Tribal Development Agencies (ITDAs). The Girijan Cooperative Corporation (GCC) produced bottles of hand sanitizers and masks on a large scale to supply to Anganwadi centres all across the state, especially in tribal areas.

11.5 Welfare for Senior Citizens and the Disabled

In 2017-18, around 14% of Telangana's population was more than 60 years old, as per the latest report on Longitudinal Ageing Study in India (LASI). As life expectancy improves with the state's economic development, the proportion of elderly in the population is likely to increase. This necessitates that the Government ensure that the elderly and persons with disabilities (PwD) are protected and taken care

of. The Department for Welfare of Disabled and Senior Citizens is doing this by providing access to education, employment, rehabilitation and mainstreaming, and ensuring the social security and protection of rights and entitlements of Senior Citizens. To achieve this goal, the Government is coordinating with various line departments for implementation of multi-sectoral schemes.

11.5.1 Policies for Welfare of the Disabled and Senior Citizens

As mentioned above, the flagship scheme to help senior citizens in the state is Aasara pensions. As of December 2020, there are nearly 12 lakh senior citizens receiving Aasara pensions across the state.

In addition to Aasara, the Government is implementing other schemes for the elderly, such as issuance of identity cards, establishing 17 old age homes and one Mobile Medicare Unit, and awareness programmes on various schemes and procedures to avail any eligible benefits.

To protect those with disabilities, the Government is implementing the following schemes:

- To pursue education, the Government is providing multiple scholarships ranging from pre-matric to post-matric; it has also enhanced the quantum of reservation from 3% to 4% in direct recruitment to Government Departments and Government Bodies to promote employment.
- Under the Economic Rehabilitation Scheme, the foremost objective is to provide livelihood opportunities to PwDs and to enhance their income by setting up self-employment projects, thereby enabling them to lead an independent and dignified life in society.
- As of January 2021, 4,77,106 Unique Disability Identity (UDID) Cards have been generated by the

Government and the state ranks first in the country in terms of the number of UDID cards issued.

- Development of IEC material in accessible formats: People with disabilities, due to their physical, sensory, cognitive, communication and mobility limitations, use various means and modes of communication. The educative material and Government advisories containing basic information on the COVID-19 pandemic were converted into comprehensible and accessible formats to cater to disability-specific communication needs (e.g. braille, short videos with inset sign language interpretation, text captions, posters, pamphlets).
- Accessible India Campaign: As part of this campaign, the Government has made efforts to ensure that Government buildings in the state capital are fully accessible to PwDs.

11.5.1.1 Response to COVID-19

In the unprecedented situation of COVID-19 and the lockdown period, the Department has undertaken several measures to ensure that people with disabilities do not face any inconvenience. The focus of attention has been to establish a toll-free helpline number, exempt PwD employees who are working in Government and public sectors from attending duties during the lockdown, ensure access to provisions and essential commodities, including cooked food, access to medicine, medical care and information, and timely delivery of entitled benefit of various schemes.

The Medical and Health Department issued instructions to the concerned officers including doctors and paramedical staff to deal cordially with the PwDs who visit designated COVID-19 assessment, quarantine or treatment centers and give priority in treatment to children with disabilities and women, while ensuring accessibility of services. They were also requested to avail the assistance of a sign language interpreter through video call, whenever needed.

11.6 Way Forward

The Government understands that its basic duty is to promote welfare of all its citizens and alleviate poverty to build a happy, peaceful and prosperous state. In this regard, the Government has invested significantly in poverty alleviation and welfare programmes. At the same time, the Government recognizes that the

fundamental feature of any prosperous society is equality: all groups within society need to benefit from economic growth and government initiatives. By considering historical inequalities, the Government is, and will continue to implement, various schemes catering to the needs of women, SCs, STs, BCs, and other minorities.



CHAPTER 12

FORESTRY AND ENVIRONMENT



Key Highlights

Managing natural resources and protecting the environment will be crucial for the state's future development. The Government of Telangana, through the Department of Environment, Forest and Science & Technology (EFS&T), is making concerted efforts towards the conservation and restoration of nature in the state. Key highlights include:

- Currently, the state has a total forest cover of 26,969 square kilometres, which accounts for 24% of its total geographical area, greater than the national average of 21.3%. The Government is implementing several initiatives to increase the forest cover in the state up to 33%.
- The Telangana Pollution Control Board implements environmental laws in the state and monitors air, water and noise pollution, as well as waste management. To curb pollution, it has implemented several measures ranging from GPS tracking of effluent-carrying trucks to establishing treatment facilities at the sources of pollution.
- To protect the rich biodiversity of the state, the Government has declared 12 protected areas in the state (nine wildlife sanctuaries and three national parks)" and these are managed by the State Forest Department. In addition, the Telangana State Biodiversity Board and the Biodiversity Conservation Society of Telangana are taking measures to protect the biodiversity in the State.
- Major initiatives of the Government for environmental conservation include Telanganaku Haritha Haram, Project Tiger and urban forest blocks.



12.1 Introduction

The environment is the basic life support system for all life forms, including human beings. It sustains not only life, but our entire economic system as well. Any efforts towards development are incomplete without due focus on the environment. The state has accorded highest priority to the conservation and restoration of nature. By formulating policies, implementing schemes and allocating funds, the Government seeks to preserve and promote its natural assets. This, in turn, will safeguard the health and wellbeing of the citizens of the state.

The state has a rich diversity of flora and fauna with over 2,939 plant species, 365 bird species, 103 mammal species and 28 reptile species and a number of invertebrate species. It also has dense forests along the banks of river Godavari. To develop and manage forests and wildlife, various schemes are being implemented, and they are continuously monitored and evaluated. According to the NITI

Aayog's Sustainable Development Goals (SDG) India Index 2019-20, the state is a 'Front Runner' on two environment-related SDGs: SDG 13¹ (Climate Action) and SDG 15² (Life on Land).

12.2 Telangana's Environment: Key Indicators and Trends

12.2.1 Forest Cover in the State

The Telangana State Forest Department is committed to preserve and restore the environmental stability and ecological balance in the state. The prime means to achieve this is by preserving the natural forests in the state, including its fauna and flora. The Department's mandate is to substantially increase the forest cover in the state and augment forest produce, such as timber and fuel wood.

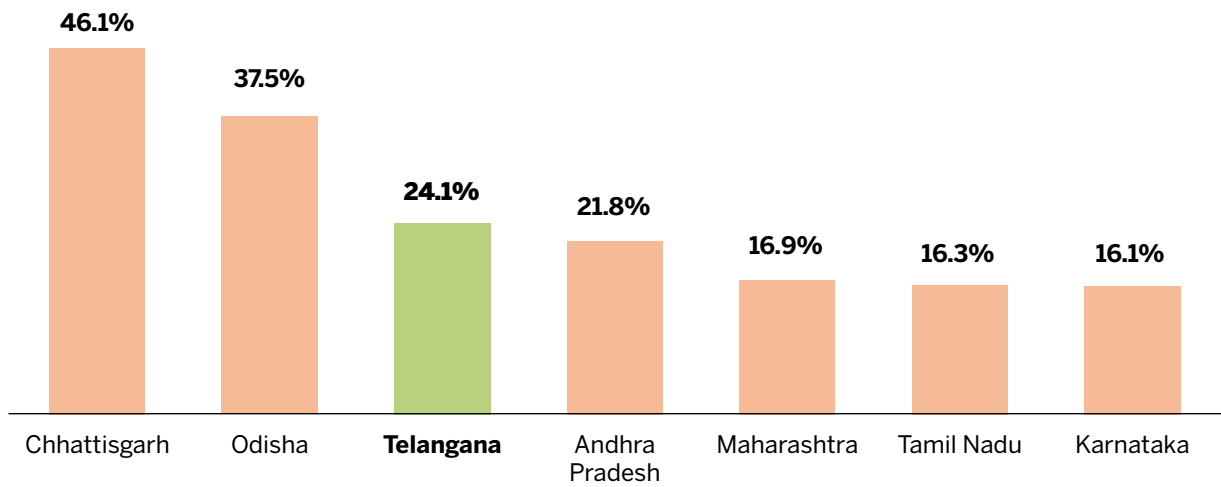
The state has a total forest cover of 26,969 square kilometres, which accounts for 24% of its total

1 SDG 13 tracks indicators such as human lives lost due to extreme weather events, share of renewable energy, reduction in carbon dioxide emissions, and so on.
2 SDG 15 tracks indicators such as forest cover, increase in area of desertification, wildlife crime cases, and so on.

Figure 12.1

Forest cover as a percentage of total area

Forest cover in Telangana is higher than most of its neighbouring states



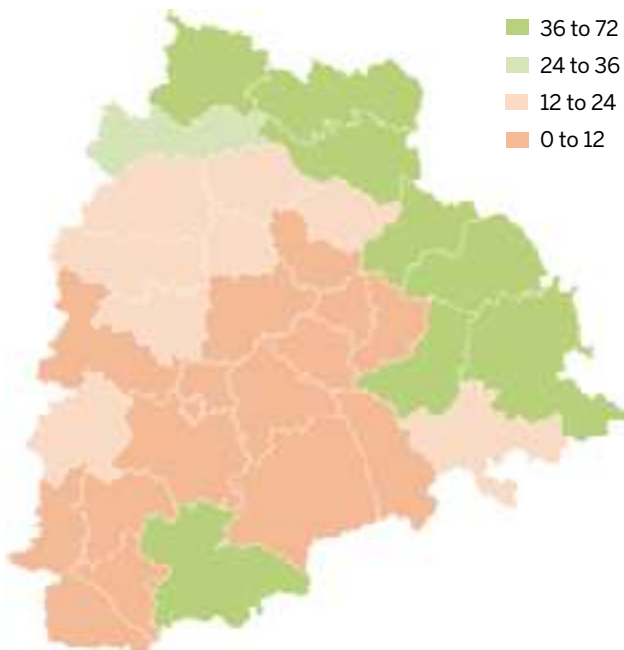
Source: Department of Environment, Forests, Science and Technology

Figure 12.2

District-wise forest cover in Telangana

Northern and northeastern districts have a large share of area as forest cover

Forest cover as a % of total geographical area in the district



State average: 24

Mulugu	71.8	Mahabubnagar	10.4
Bhadradri	60.9	Nalgonda	9.0
Kumuram Bheem	54.4	Medchal-Malkajgiri	7.7
Jayashankar	51.6	Siddipet	7.1
Mancherial	45.2	Warangal Rural	6.8
Adilabad	42.8	Rangareddy	5.9
Mahabubabad	39.5	Wanaparthy	5.3
Nagarkurnool	39.0	Sangareddy	4.7
Nirmal	32.6	Yadadri	3.6
Kamareddy	23.7	Suryapet	3.5
Medak	21.2	Narayanpet	3.3
Nizamabad	20.8	Warangal Urban	2.3
Rajanna	20.1	Jangaon	1.2
Jagitial	19.6	Hyderabad	0.8
Peddapalli	15.3	Jogulamba	0.3
Khammam	13.8	Karimnagar	0.1
Vikarabad	12.3		

Source: Department of Environment, Forests, Science and Technology

Box 12.1

The Ongoing Consequences of Climate Change

One of the most visible consequences and evidence of climate change is the rise in the occurrences of extreme weather events, such as floods, droughts, or cyclones. Due to climate change, the frequency, intensity and patterns of these events are changing, leading to unprecedented loss of human life as well as wealth.

According to the 15th Finance Commission Report, Telangana's Disaster Risk Index (DRI) score is 45 out of 100, which is the 7th best in the country. DRI scores are based on the probability of hazards (which includes floods, droughts, cyclones and earthquakes) and the extent of vulnerability in states (which includes quality of housing, remote terrains, etc). According to the Council on Energy, Environment and Water, a research organization, Telangana is the third most vulnerable state in South India in terms of flooding, with Bhadradi, Adilabad and Hyderabad districts being hotspot districts

(Mohanty 2020).

Recognizing this challenge, the Government is committed to minimizing its contributions to climate change and preparing the state for ongoing and future climate challenges. Efforts are already underway to make the state climate resilient. For instance, the Telangana State Heatwave Action Plan 2020 provides a framework to the state administration for heatwave response since the state is vulnerable to heatwaves and droughts.

References

Mohanty, A. 2020. Preparing India for Extreme Climate Events: Mapping Hotspots and Response Mechanism. *Council on Energy, Environment and Water*.

XV Finance Commission. 2020. Finance Commission in Covid Times: Report for 2021-26.

geographical area. This is greater than the national average of 21.34%. Seen against its neighbouring states, it has greater forest cover than most, except Chhattisgarh and Odisha (Figure 12.1).

Within the state, Mulugu and Bhadradi districts have the highest proportion of forest cover, and Karimnagar and Jogulamba have the lowest. (Figure 12.2)

12.2.2 Initiatives to Increase Forest Cover

To realize the goals set in the revised 2002 State Forest Policy, Vision 2020, the Forest Department implements

various development schemes to protect and develop existing forests, and to improve their productivity and economic value.

12.2.2.1 Telanganaku Haritha Haram (TKHH)

Telanganaku Haritha Haram is one of the flagship programmes of the Government. It was launched in 2015-16 with the aim to increase the state's forest cover from 24% to 33% of its total geographical area. The strategy to achieve this is two-fold:

- Take up extensive plantation outside the notified forest areas like roadside, barren hills, institutional

premises, housing colonies, community land and so on

- Take up large-scale plantations inside notified forests to increase density and assist natural regeneration through intensive water harvesting structures in forests

Under TKHH, 172 crore seedlings have been planted in the state since 2015, with the number of seedlings planted increasing for most years. The target for 2020-21 was 29 crore seedlings to be planted, of which more than 20 crores have been achieved (Table 12.1).

Table 12.1

Number of seedlings planted under TKHH from 2015 to 2021

	Number of seedlings planted (in crores)	Expenditure (in Rs. crore)
2015-16	15.8	155.9
2016-17	31.7	178.3
2017-18	34.1	110.8
2018-19	32.0	121.8
2019-20	38.2	33.4
2020-21	20.6	35.4
Total	172.4	635.5

Source: Department of Environment, Forests, Science & Technology

12.2.2.2 Urban Forest Blocks

The Government is developing forest blocks within the limits of cities to provide clean air and a healthy lifestyle to urban dwellers. These blocks also protect forest areas in the city from human encroachment and support the larger goal of building clean, green, sustainable cities. Currently, there are 188 forest blocks, spread over 1,60,660 acres in seven districts (Hyderabad, Medak, Medchal-Malkajgiri, Rangareddy, Sangareddy, Siddipet and Yadadri).

Due to the Government’s commitment to protecting urban forests, Hyderabad has been recognized as

a 2020 Tree City of the World by the United Nations’ Food and Agriculture Organization (FAO) and Arbor Day Foundation. Hyderabad is the only Indian city to earn this recognition.

12.2.2.3 Compensatory Afforestation Fund Management and Planning Authority (CAMPA)

The CAMPA functions under the MOEF (Ministry of Environment, Forests and Climate Change, Government of India) to fund states in cases where forest land gets diverted towards non-forest use. CAMPA supports the Government’s afforestation efforts through interventions around plantations, soil and moisture conservation, forest fire management, monitoring and evaluation, capacity building and so on. Since 2014, Rs. 1,000 crore of CAMPA funds have been utilized in the state.

12.2.2.4 Forestry Education

The Forest College and Research Institute (FCRI) was established in Mulugu in 2016. It offers a four-year B.Sc. Forestry course where one can get quality education on forestry and research. The Telangana State Forest Academy, Dullapally (Medchal-Malkajgiri district) is another institution in the state for forestry education and training. The Government of India has recognized the institute to impart initial training to Forest Range Officers from across the country. It also hosts national level refresher training and workshops.

Additionally, most sanctuaries and national parks in the state have environment education centres that come up with exhibits, models, written material, etc. related to nature. They also conduct nature camps for schools, with special emphasis on government schools.

12.2.2.5 Telangana State National Green Corps

The Government of India launched the National Green Corps (NGC) programme in all districts of the country. It is currently being run in all districts of the state, covering 5,000 schools. The programme aims to inculcate ‘environment discipline’ among students

by forming eco-clubs and involving students in environment related activities.

12.2.2.6 Telangana State Forest Development Corporation

The TSFDC was established with the objective of raising plantations to meet the demand of wood-based industries. The corporation has been raising various species such as eucalyptus and bamboo to meet the pulpwood demand of various paper mills in the state, thus relieving the natural forests from the burden of supplying the raw materials to them.

The Corporation promotes environmental preservation, increases forest land productivity, provides gainful employment to local communities, tribals and rural people, and raises environmental awareness among the public.

TSFDC has taken up a new initiative to get plantations certified under Forest Stewardship Council (an internationally recognized organization) so that companies like IKEA, which prefer high quality, certified material, pay a higher price for the produce.

During the COVID-19-induced lockdown, the corporation suffered loss of revenue from eucalyptus and bamboo harvesting, which usually employs migrant labour from Andhra Pradesh and Madhya Pradesh.

12.2.2.7 Other Activities

Other major activities of the Government include forest research (to improve plantation techniques and practices), monitoring of forest density, mapping of forest areas, demarcating forest boundaries and so on. Each of these is carried out by involving the local communities and through the use of information technology, such as GIS. The adoption of IT has brought efficiency in communication of the data, consistency, transparency, accuracy, reliability and ease of use. The Government has also developed a web-enabled Forest Management Information System for officers and other stakeholders of the forestry and wildlife sector.

12.2.3 Pollution

The Telangana Pollution Control Board (TSPCB) is entrusted with the implementation of environment laws and rules within the state. These include the Water (Prevention and Control of Pollution) Act, 1974, the Plastics Waste Management Rules, 2016, Noise Pollution (Regulation and Control) Rules, 1999, among others. Within its purview falls the control and management of air pollution, water pollution, noise pollution and waste.

The TSPCB monitors pollution caused by the various industries in the state and initiates action against non-complying ones. Through the prevention and control of pollution, it aims to improve the quality of life of citizens.

12.2.3.1 Air

The National Air Quality Monitoring Programme (NAMP) measures the presence of pollutant particles in the ambient air at various stations in the country, out of which 22 stations are in the state. The TSPCB monitors air quality at 16 additional stations. Three display boards are installed in Hyderabad city to make the public aware of pollution levels. The TSPCB also runs a redressal system, wherein citizens can make pollution-related complaints via phone, email or website.

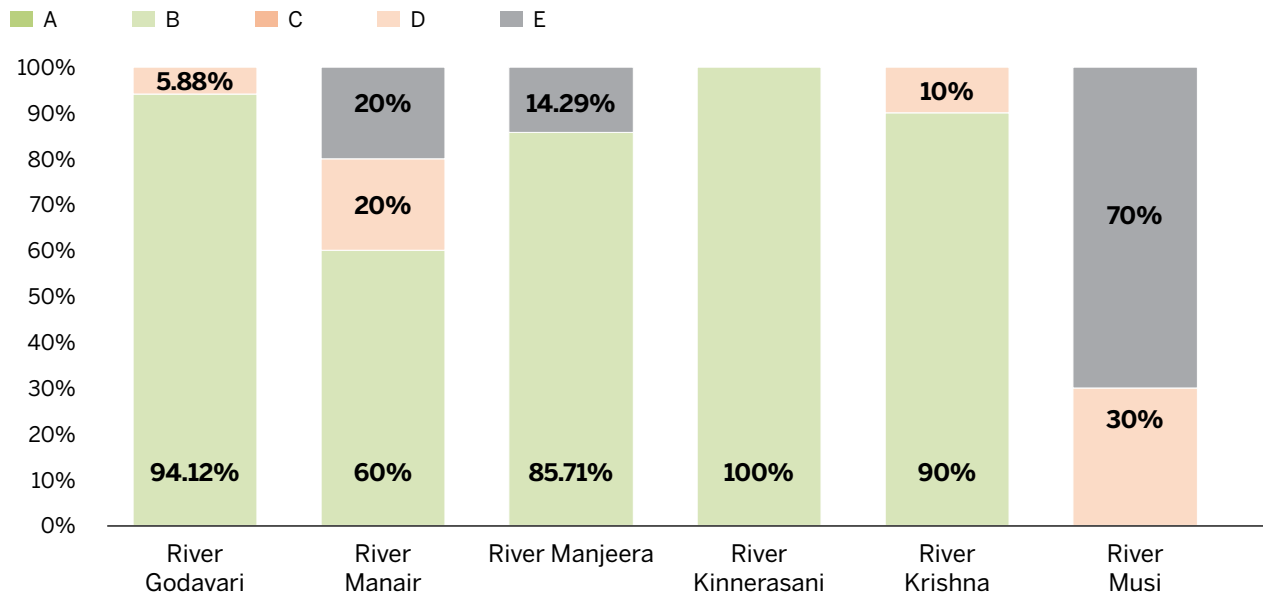
Air quality index (AQI) data (for cities where data is available), which is a composite measure of pollution, indicates that in the major cities of the state, pollution levels have been fluctuating but declined in 2020. No monitoring station in the state recorded AQI level worse than 'moderate'.

Hyderabad's average air pollution level rose from 2014, reaching its peak in 2017 at 101.3. It has been on the decline since, and reached its lowest AQI level in 2020 (data till November) at 74.8. One major factor for the decline in pollution levels in 2020 was COVID-19. Sectors that contribute to pollution (such as transport, industries and construction) saw reduced activity during the lockdown. A report by TSPCB on the ambient air quality during the lockdown found that air

Figure 12.3

Water pollution in the state

% of monitoring stations by quality level (A/B/C/D/E) and water body



Source: TSPCB

Note: 'A' is the grade for the highest quality water while 'E' is the grade for the lowest.

pollution dropped significantly in Hyderabad from the end of March till May 2020. There was a 25-35% drop in PM2.5 and PM10 levels during March-May 2020 compared to the same months in 2014-19.

12.2.3.2 Water

The TSPCB, under the National Water Quality Monitoring Programme (NWMP), measures water pollution across different water bodies in the state. It has 210 stations across the state, regularly monitoring rivers, lakes, groundwater, sewage treatment plants, etc. Data gathered from these stations are used to make policy decisions by the Government.

The Central Pollution Control Board (CPCB) defines different grades of water quality, ranging from 'A' (being the highest quality) to 'E' the lowest³. Over

the last six years, river water quality was measured at various stations in the state against these criteria. Comparing different water bodies within the state, we see that most rivers recorded 'B' water quality at most stations in 2020. River Musi was an anomaly, with a large number of 'E' recordings (Figure 12.3).

12.2.3.3 Measures Taken Against Pollution

Steps taken by the Government to combat different kinds of pollution in the state include:

- A GPS-based automatic effluent tanker tracking and reporting system for 167 authorised vehicles transporting effluents to the Common Effluent Treatment Plants (CETPs).
- GPS tracking for 51 bio-medical waste carrying

3 Read CPCB's water quality index here: https://cpcb.nic.in/wqm/Designated_Best_Use_Water_Quality_Criteria.pdf

vehicles and 65 hazardous waste carrying vehicles.

- An online Volatile Organic Compounds (VOCs) monitoring system in pharma industries, connected to TSPCB servers.
- Zero Liquid Discharge (ZLD) system established in 84 major pharmaceutical units generating more than 25 kilolitres of effluents per day; ZLD helps reduce wastewater and produce clean water suitable for reuse.
- Source apportionment, emission inventory and carrying capacity studies to be conducted in the Greater Hyderabad Municipal Corporation (GHMC) area to identify the precise sources of pollution.

12.2.4 Biodiversity

Biodiversity captures the various forms of life on Earth including ecosystems, animals, plants, fungi, microorganisms, and so on. Earth's natural biodiversity is currently under several threats, such as habitat loss and destruction, alterations in ecosystem composition, over-exploitation, pollution and contamination, global climate change, etc. Telangana is home to a rich biodiversity that is also under threat today.

Important endangered species found in the state include the tiger, panther, Indian gaur, four-horned antelope, blackbuck and marsh crocodile. Additionally, the state's dense forests are home to several plant species, such as Nallamaddi, Yegisa, Rosewood, Narepa, Bamboo and Teak. To protect this rich biodiversity, the Government has declared a network of 12 protected areas in the state, which includes nine wildlife sanctuaries and three national parks, covering an area of 5,692 square kilometres. Hyderabad is the only city in the country which has three notified national parks to conserve the native flora and fauna in the urban landscape.

The Government has implemented several initiatives to improve biodiversity in the State:

12.2.4.1 Telangana State Biodiversity Board

The Telangana State Biodiversity Board was instituted to achieve the goal of protection of the state's biodiversity. Activities of the Board include:

- It has constituted 13,426 Biodiversity Management Committees (BMCs) at all local bodies: Gram Panchayats, mandals, municipalities and zilla parishads of the state.
- At these local bodies, the board has prepared a People's Biodiversity Register (PBR).
- To document the threatened species of the state, it has prepared and released the book 'Threatened Taxa of Telangana State', which contains a district wise database and GIS mapping of threatened species of the state.
- It conducts training and capacity building programmes at GP, mandal and district levels to create awareness on the Biodiversity Act and Rules, preparation of PBRs, constitution of BMCs, etc. to stakeholders like universities, line departments, traders, industries and others.

Apart from the Board, the Government has also constituted the Biodiversity Conservation Society of Telangana (BIOSOT) to implement conservation measures in wildlife sanctuaries in the state. The Society is responsible for the protection and management of sanctuaries and tiger reserves, through activities like habitat improvement, monitoring the movement of wild animals, etc.

12.2.4.2 Project Tiger

Under this scheme, funds are allocated to manage the two tiger reserves in the state: Amrabad Tiger Reserve and Kawal Tiger Reserve. Both tiger reserves are meant to ensure the survival and propagation of tiger populations in the state. The Amrabad Tiger Reserve is located in the Mahabubnagar and Nalgonda districts and its total area is 2,611 square kilometres. The Kawal

Tiger Reserve is spread across the Adilabad, Kumuram Bheem, Mancherial and Nirmal districts and its total area is 2,015 square kilometres.

'Project Tiger' also provides compensation to families who are relocated from reserves. As a result of the Government's efforts, there has been a considerable increase in the population of tigers and other wild animals in these areas.

12.3 Way Forward

Environmental degradation and climate change are not state-specific issues, but global crises that affect every citizen of the world. Actions taken in one part

of the world can have far reaching consequences halfway across the globe. It is imperative to recognize the problem and design solutions in a localized manner, at every level of government, by involving local communities. This is what the Government has set out to achieve, through its various agencies that work in tandem with local government bodies. Given the scale and complexity of the problem, the approach to solving it should necessarily be multi-pronged. To this end, the Government is making simultaneous interventions to tackle rising pollution, depleting forest cover and degrading biodiversity. Through innovative programmes and adequate allocations, it aims to be a leader in the country in environmental conservation.



CHAPTER 13

PANCHAYAT RAJ AND PALLE PRAGATHI



Key Highlights

More than 60% of Telangana lives in villages, which makes improving Gram Panchayat (GP) governance and rural development a powerful tool for improving citizen welfare. In order to improve service delivery to the people living in rural areas, the Government enacted the Telangana Panchayat Raj Act, 2018. Through the Act's implementation and other schemes, the Government is ensuring that all the services are delivered effectively in the villages. Key highlights include:

- The Act provides a clear institutional and governance structure for GPs while also specifying the powers, roles and responsibilities, and accountability standards for key functionaries. This has strengthened the functioning of GPs and helped improve service delivery.
- To further strengthen rural governance, the Government has hired 9,355 Junior Panchayat Secretaries on innovative performance-based contracts.
- The Act has been given form and implementation momentum through three rounds of the Palle Pragathi programme, the Government's flagship scheme for rural local governance. This has resulted in tremendous improvements in planning, service delivery, financial performance and responsiveness of GPs across the state.



13.1 Panchayat Raj Act 2018: Implementation Status

Recognizing the importance of local governance for effective service delivery, the 73rd and 74th Constitutional Amendments gave Constitutional Status to the third tier of governments, enabling them to better deliver services to citizens. To ensure that this Constitutional intent is met in the state, the Government has developed and implemented a governance framework explicitly focused on accountability for outcomes and improved service delivery to citizens. The foundation of this framework has been 'The Telangana Panchayat Raj Act 2018' which has transformed rural governance in the state for several reasons.

The Government has reorganized GPs and formed 4,383 new GPs. To empower the marginalized sections of the society and to ensure their focused development, many tribal thandas have been declared as independent GPs. All tribal thandas/gudems/habitations with a population exceeding 500 and located at more than 1.5 km from the existing GP headquarters were made new GPs. With the formation of these new GPs, there are 12,770 GPs in the state.

Among them, 1,281 are Schedule-V area GPs and 1,177 are 100% Schedule Tribe (ST) GPs in plain areas.

The Panchayat Raj Act clearly defines the powers available to GPs and their key functionaries. This covers all the roles and responsibilities of the GP, the Panchayat Secretary and the Sarpanch, across areas of village development, such as sanitation, street lighting, water supply, financial management and collection of taxes. Finally, it introduces a monitoring system, where a mandal level officer inspects the functioning of every GP once every three months.

Since the Act came into force in April 2018, the Government has made significant progress in implementing its key features (see Figure 13.1).

In addition to implementing the Panchayat Raj Act, the Government has also built the infrastructure for GPs to function effectively. At the formation of the state, there was a requirement of buildings for 8,351 GPs. Of this, 3,554 buildings were sanctioned under the MGNREGS programme and 1,774 have been completed so far. Currently, 6,765 GPs have been equipped with computers, printers and other equipment, and out of these 1,245 GPs have internet connectivity.

Figure 13.1**Progress of implementation of Panchayat Raj Act 2018**

Theme	Key provision	Implementation Status
Representation	50% reservations for women in Panchayat Raj Institutions (PRIs)	Currently, 50.7% of elected representatives in PRIs are women (a total of 67,486 women representatives). Similarly, 16.6%, 22.9% and 10.6% of all elected representatives are SC, ST and BC respectively.
Performance of elected functionaries	Provisions for electing the Sarpanch and Upa Sarpanch, as well as their terms office, including grounds for disqualification with clear definition of non-performance	Data based monitoring and corrective actions in case of non-performance. Show cause notices are being issued and corrective actions are being taken in cases of non-performance.
Gram Panchayat powers	Defines the powers available to the GP and the key functionaries, and the devolution and delegation of such powers	Financial and non-financial decisions are clear among PRI functionaries across all levels.
Roles and responsibilities	Clear definitions of the roles and responsibilities of the GP, the Panchayat Secretary and the Sarpanch across key result areas (KRAs)	A comprehensive set of KRAs with corresponding performance indicators have been articulated to the GPs. This creates a common set of priorities for citizen-centric service delivery. These KRAs cover Gram Panchayat meetings, planning and implementing resolutions, plantations and green cover, sanitation (solid and liquid waste) and cleanliness, street lighting, coordination for water supply, public safety, convenience and health, financial management, maintenance of records, registers and statistics, assessment and collection of taxes and non-taxes.
Monthly progress tracking	Submission of Monthly Progress Report of the GP by the Panchayat Secretary	The formats for monthly progress statements have been fine tuned and streamlined to reduce reporting burden. Additionally, a daily report covering performance on high frequency indicators such as road/drain cleanliness, street lights, etc. has also been implemented.
Supervision	A mandal level officer will inspect the functioning of every GP by visiting once in three months along with checking the details in the register and records. Such inspections are also made by officers at other levels (e.g. district), with a mechanism for timely action based on the findings of the inspections.	To ensure efficient use of supervisory bandwidth and to maintain the element of "surprise", the inspections are driven by a central algorithm which allocates GPs to officers based on predefined criteria. Both self reporting and supervision are done on comparable app platforms for better workflow, resolution and comparability. The Government is also using a call centre for direct outreach to citizens to help understand their perceptions of quality of service delivery.
Gram Panchayat meetings	The panchayat body must conduct GP meetings at least once a month, and Grama Sabhas once in every two months; it must analyse the progress of works that are taken up and discuss the implementation of various welfare schemes and about developmental activities along with passing the resolutions	GP meetings and Gram Sabhas are tracked by Panchayat Secretary reports and through the inspections. The call centre is also used to corroborate findings from the officials.
Decentralization of powers and funds	The establishment of new panchayats would ensure more decentralisation of powers and development of the villages. Funds given to panchayats through the State and Central Finance Commissions and State Government would enhance the resources available within GPs for taking up village developmental activities	Seamless release of funds directly to the PRI accounts without having to go through intermediate layers on a regular basis with certainty. State and Central grant (including FC grants) of Rs. 308 crore is released every month to GPs.
Training	All Ward Members, Upa-Sarpanches, Sarpanches shall undergo training on developmental activities of PRIs	Five day foundation training was conducted for all the Sarpanches during February and March 2019. After a detailed training needs assessment with all stakeholders, 10 trainers per district have been identified and oriented for further training.

Box 13.1

Systematic Strengthening of Functions, Funds and Functionaries for Panchayat Raj Institutions

The larger narrative of reforms around Panchayat Raj in the state are aligned to the framework of devolution on 3Fs - Functions, Funds and Functionaries:

- In line with the 73rd Amendment, the state is one of the top states in terms of devolution of most functions to PRIs (17 out of 18 functions have been devolved to PRIs).
- The state has also been providing the GPs funds by matching the Union Finance Commission (FC) Grants. These funds are proportionate to population, with

adequate supplemental provision made for vulnerable groups.

- The state has ensured adequate staffing for GPs through recruitment of Junior Panchayat Secretaries

The Panchayat Raj Act 2018 provides the basis for this; it has been implemented in practice through a consistent outcome orientation on monitoring and review of GPs and GP functionaries. These initiatives are set to improve the quality of life in GPs with strong potential for replication.

13.2 Strengthening Functionary Performance

Service delivery in rural areas depends on the performance of the various functionaries within local governance such as Panchayat Secretaries, elected representatives, Mandal Panchayat Officers (MPOs), Divisional Level Panchayat Officers (DLPOs), District Panchayat Officers (DPOs), etc. Recognizing the importance of effective personnel management for service delivery, the Government has implemented several reforms to strengthen personnel management practices within PRIs and the Panchayat Raj and Rural Development (PR&RD) Department.

Firstly, the Government wanted to ensure that there are no vacancies in Gram Panchayat Secretaries

positions across the state. Therefore, it embarked on recruiting 9,355 Junior Panchayat Secretaries in an innovative recruitment model, with one-of-its-kind regularization of these employees, contingent on their performance. The contractual duration (three years) also represents a period which is meaningful to create impact and provide last mile service stability, while being attractive enough for serious candidates to perform well.

Secondly, the Government has implemented innovative management systems to increase accountability and thereby improve performance of frontline functionaries and other officials. The Panchayat Raj Act 2018 establishes mechanisms for supervision, evaluation and corrective action for various personnel in local governance. To ensure that these mechanisms

are put into practice effectively, the Government has implemented several notable initiatives:

- Based on the Key Result Areas (KRAs) from the Panchayat Raj Act 2018, the Government has identified a set of Key Performance Indicators (KPIs) for periodic measurement. These KPIs are largely outcome focused and aligned to citizen priorities.
- The Government has transitioned all reporting and monitoring to app-based interfaces. The launch of the Panchayat Secretary and Mandal Panchayat Officer apps have ensured that the reporting of Panchayat Secretaries is directly comparable with the inspections of their supervisory officers (MPOs). Additionally, given that some aspects of performance (e.g. sanitation) change frequently, a daily reporting section has also been included to ensure that such indicators are reported and verified more frequently. These apps have stabilized and are improving usability and creating time savings for both Panchayat Secretaries and MPOs.
- To improve effectiveness of supervision, the Government has created a centralized automatic scheduling system for MPO inspections. This has the benefit of prioritizing GPs based on data (e.g. outliers based on self-reported performance) for closer scrutiny, while also retaining a level of autonomy for the MPOs. This is in line with national and international good practices, and is being rolled out currently through a nested model, where each layer of inspection also verifies the 'accuracy' of reporting and the management by the layer below. This goes up to DLPOs and DPOs, creating multiple checks and balances.
- The Government is using 'arm's length' agents for surprise visits and verifications. These include senior bureaucrats, personnel from adjacent functions (e.g. Rural Development) and social audit teams. Inputs from these visits are integrated into the system to assess accuracy of data from within

the system.

- Finally, the Government has mobilized its call-centre to reach out directly to citizens to assess perceptions of service delivery at the last mile, so that appropriate action can be taken

Preliminary analysis of administrative data indicates that the above initiatives are achieving better outcomes within the available resource envelope.

13.3 Enhancing Fund-Flow to PRIs

Delivering better services requires greater resources. Cognizant of this, the Government is providing PRIs sufficient funds by matching the Union Finance Commission (FC) Grants (Rs. 308 crore per month). These funds are distributed proportionate to the overall population and the population of vulnerable groups. As part of the distribution, the Government ensures that all GPs, regardless of size, receives a minimum of Rs. 5 lakh annually to cover basic administrative costs.

The Government has also implemented changes to the accounting and funding mechanisms for PRIs to ensure adequate funds for designated functions. Specifically, the reporting mechanism has been fine tuned to reflect the areas of expenditure, aligned to KRAs. This ensures that while autonomy is given to PRIs (in terms of using funds from a variety of sources), there are inbuilt checks to monitor usage of such funds and reward efficiency.

13.4 Palle Pragathi

With the Panchayat Raj Act as the foundation for village governance, the Government launched the Palle Pragathi programme on 6th September 2019. The twin objectives of the programme are to improve the quality of life in rural areas and strengthen the governance of GPs. Specifically, Palle Pragathi seeks to improve village sanitation, infrastructure, tree cover and governance

Figure 13.2

Palle Pragathi rounds and key activities

Rounds	Dates	Key activities
1st Round	September 06, 2019 to October 05, 2019	Cleaning roads/drains; identifying low-lying areas; refilling wells
2nd Round	January 02, 2020 to January 12, 2020	Institutionalize and deepen activities from 1st round
3rd Round	June 01, 2020 to June 08, 2020	

Source: Department of Panchayat Raj & Rural Development

of GPs. The underlying theme of Palle Pragathi is the effective utilisation of available financial, human and natural resources for the integrated development of GPs. So far, three campaign rounds of Palle Pragathi have been implemented (see Figure 13.2). Monitoring is done by a combination of official inspections (MPOs, DLPOs and DPOs) and flying squads of Government officials.

13.4.1 Key Activities

The Government has taken proactive measures under the Palle Pragathi programme to meet its goals of improving rural lives. Various activities like cleaning of roads and drains, identification of low lying areas, bailing out of water from low lying areas, identification of old and dilapidated houses and offices, demolition and cleaning of debris, filling up of old and unused open wells, etc., were taken up.

As a part of the Palle Pragathi programme, all GPs have been sanctioned a segregation shed at a cost of Rs. 2.3 lakh and *vaikunta dhamam* at a cost of Rs. 12.5 lakh. A tractor-trolley to collect and transport solid waste and a tanker to water the saplings planted under THH have been provided to each GP. All households have been sanctioned a soak pit to absorb water back into the surrounding ground without flooding. Out of the 12,725 dumping yards proposed for GPs, 12,625 have been grounded.

13.4.1.1 Other Activities

Various other initiatives have been taken up by the Government under the Palle Pragathi programme to support rural development. For example, cement concrete roads worth Rs. 799 crore have been sanctioned to GPs. All GPs in the state have prepared their annual budgets till 2023-24, out of which 10% of funds are reserved for green activities. 'Power week' has been observed regularly, in which damaged, bent and rusted electric poles have been rectified. Loose wires were tightened and fixed. Regular visits of district officials and night halts at villages are also being conducted. All the defective street lights in the GPs were rectified and measures were in place to ensure their functioning. Mandatory regular cleaning of roads and drains is being ensured.

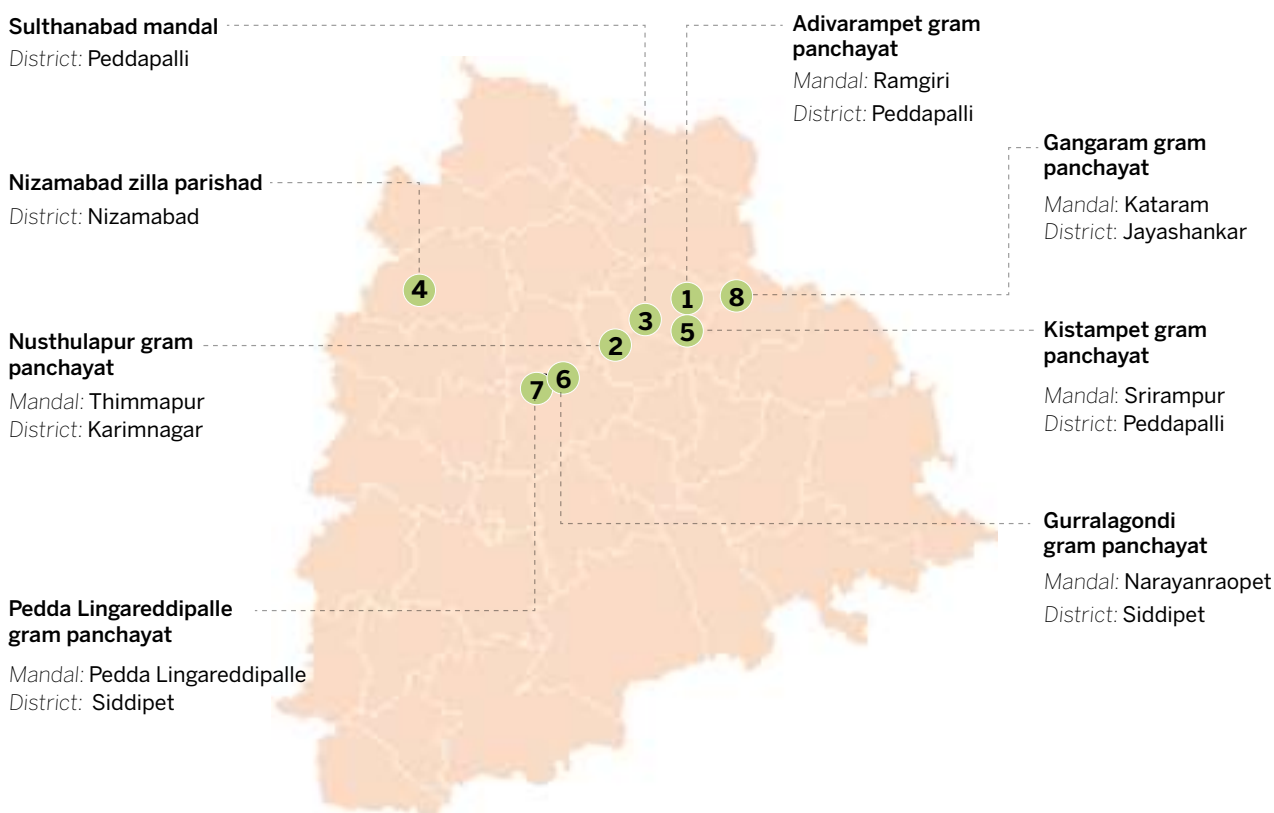
Two mobile applications have been launched to monitor the administration of GPs, one for the Panchayat Secretaries to capture their daily and monthly activities and the other for inspection by MPOs, DLPOs and DPOs to capture their statutory inspection reports of Gram Panchayats.

13.4.2 Resourcing for Palle Pragathi

State and Central Governments' grants, along with own source revenue of GPs, are typically used to finance spending on amenities in GPs. In 2019-20,

Figure 13.3

List of Awards received by different Gram Panchayats



1 Nanaji Deshmukh Rashtriya Gaurav Gram Sabha Puraskar

Incentive	Rs. 10 lakh
Contribution	Outstanding contribution to the socio-economic development by involving Gram Sabhas

2 Child Friendly Gram Panchayat Award

Incentive	Rs. 5 lakh
Contribution	Adopting child-friendly practices in Gram Panchayat.

3 4 Deen Dayal Upadhyay Panchayat Award

Incentive	Rs. 50 lakh (Nizamabad Zilla Parishad) and Rs. 25 lakh (Sultanabad Mandal)
Contribution	Improving delivery of basic services, public goods and e-Governance.

5 6 7 8 Deen Dayal Upadhyay Panchayat Award

Incentive	Rs. 5 lakh each
Contribution	Improving delivery of basic services, public goods and e-Governance.

Source: Department of Panchayat Raj & Rural Development

the Government had released Rs. 2,373 crore for the programme. In 2020-21, the Government has released Rs. 3,079 crore, which includes the Fifteenth Finance Commission grant and its matching grant from the State Government.

13.4.3 Awards

Several GPs in the state were recognized nationally through the Government of India's National Panchayat Awards, 2020, for their performance on key governance and development indicators.

13.5 Other Initiatives of PR&RD

13.5.1 Telangana State Institute of Rural Development (TSIRD)

TSIRD is an apex institute for Training and Capacity Building of PR&RD functionaries in the state. The main objective of the institute is to enhance the knowledge base and upgrade the skills of the PR&RD Department through training, action research, monitoring and evaluation. To do this, the institute organizes foundation and capacity building training programmes for PR&RD functionaries, including the elected representatives of PRIs in the state.

The measures introduced and implemented by the TSIRD have been recognized nationally. Some accolades include the 'Certificate of Appreciation' awarded by the Ministry of Rural Development, Government of India in 2019 for its training programmes, and a National Award for Best Performing SIRD in Rural Development Programmes in 2018.

13.5.2 Shyama Prasad Mukherji Rurban Mission (National Rurban Mission)

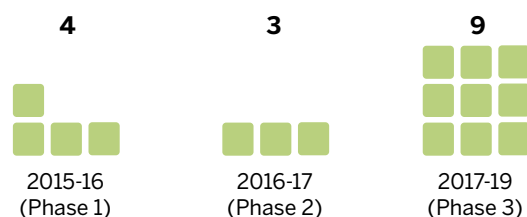
The Shyama Prasad Mukherji Rurban Mission (SPMRM) was launched by the Government of India to develop clusters of villages in the country that preserve and nurture the essence of rural community life, with focus on equity and inclusiveness, while providing the facilities perceived to be essentially urban in nature. The Government is committed to carrying out this mission in the state.

Under this mission, each cluster is provided with a range of programmes and services, including skill development training linked to economic activities, agro processing and agri services (storage and warehousing), health facilities, upgrading schools, sanitation and provision of piped water supply, solid and liquid waste management, and Citizen Service

Figure 13.4

Year-wise number of clusters created under National Rurban Mission

Clusters created



Source: Department of Panchayat Raj & Rural Development

Centres for electronic delivery of services. The Government of India has sanctioned a total of 17 rurban clusters (12 non-tribal and 5 tribal) to the state under National Rurban Mission (NRuM) in three phases. ICAPs (Integrated Cluster Action Plans) and DPRs (Detailed Project Reports) of all the clusters have been approved and the execution of works is in progress. The works proposed in the 17 Rurban Clusters of the state are spread across 555 GPs, covering around 2.3 lakh households with a population of 7.6 lakhs.

13.5.2.1 Awards

The performance of the scheme has been recognized nationally. The state has ranked 3rd for overall performance, under the 'Best Performing States' category in 2018 at the National Rural Development Function held in New Delhi. It ranked 2nd under the 'Clusters First to Prepare Draft Geo-Spatial Plan' category in 2019.

13.6 Way Forward

Villages are an integral part of the state's economy and society. To realize 'Bangaru Telangana', the development outcomes of the villages in the state need to be improved. In a democracy, the most powerful way to improve outcomes is by strengthening governance. Most notably, through the Panchayat Raj Act 2018, the Government has strengthened the basic governance structures in villages to deliver better services. Going forward, the Government will continue implementing the provisions of the Act, thereby strengthening rural governance and improving the welfare of rural people.



CHAPTER 14

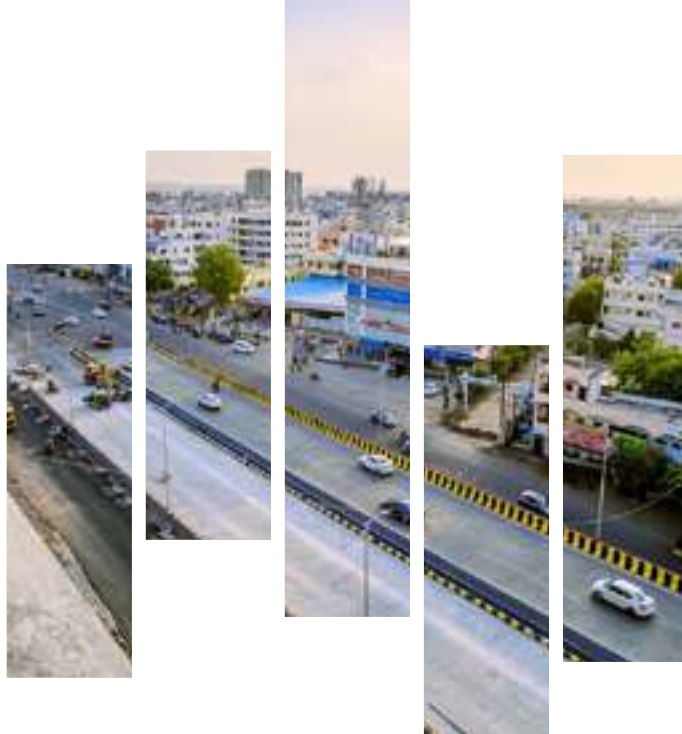
URBAN DEVELOPMENT



Key Highlights

Telangana is a fast-urbanizing state, and its cities are driving its economic growth. The Government is making efforts to further develop urban areas in the state so as to enable economic growth. At the same time, the Government is ensuring sustainability of the cities, together with the welfare and well-being of its residents.

- Of the state's total population, 38.9% lives in urban areas. According to the National Commission on Population, the share is expected to become 50% by the year 2026.
- These urban areas are governed by Urban Local Bodies (ULBs). Currently, there are 141 ULBs in the state, and their administration is guided by the Telangana Municipalities Act 2019.
- The Government has taken up several initiatives to improve urban development outcomes across sectors: from water and sanitation, to roads, to poverty alleviation.
- Hyderabad has been declared the 'Most Liveable City' in India as well as the second fastest growing city in Asia. Therefore, the Government is working towards accelerating development in the city.
- The new Greater Hyderabad Municipal Corporation (GHMC) Act implements a 50% quota for women in GHMC Council, and allows greater citizen participation in municipal governance through Citizens Committees.
- The Government is running the Annapurna scheme, a food security programme, and Basti Dawakhana, a health programme, for the welfare of poor residents of Hyderabad.
- The Hyderabad Metro Rail project, covering 69 kms, is a mass transit solution to address the increasing traffic congestion and pollution levels in Hyderabad.



14.1 Introduction

Across the world, cities are the engines for economic growth. In Telangana, too, cities, led by Hyderabad, are driving the state's economic growth. The Government of Telangana is committed to encouraging sustainable urban development that contributes to the state's economy while ensuring that urban citizens and communities have access to basic infrastructure and services (such as clean water, health services and transport). This is in line with the United Nations Sustainable Development Goals (SDGs) and specifically SDG 11, which aims to build sustainable cities and communities. According to the NITI Aayog's Sustainable Development Goals (SDG) India Index, Telangana is a 'front runner' on SDG 11. In Government of India's 2018 Ease of Living Index, Karimnagar (ranked 11th) and Hyderabad (27th) featured in the top 30 cities in India.

14.2 Urbanization Trends

With 38.9% of the population living in urban areas, the state stands seventh in terms of urbanization in the country. Telangana is also one of the fastest urbanizing states in the country. The National Commission on Population estimates that by 2026, close to 50% of the

state's population will live in cities (compared to 36% in the country). Within the state, Hyderabad accounts for the largest share of the urban population (28.9% of the state's urban population) but other cities such as Warangal, Nizamabad and Karimnagar are also growing rapidly.

14.3 Urban Governance

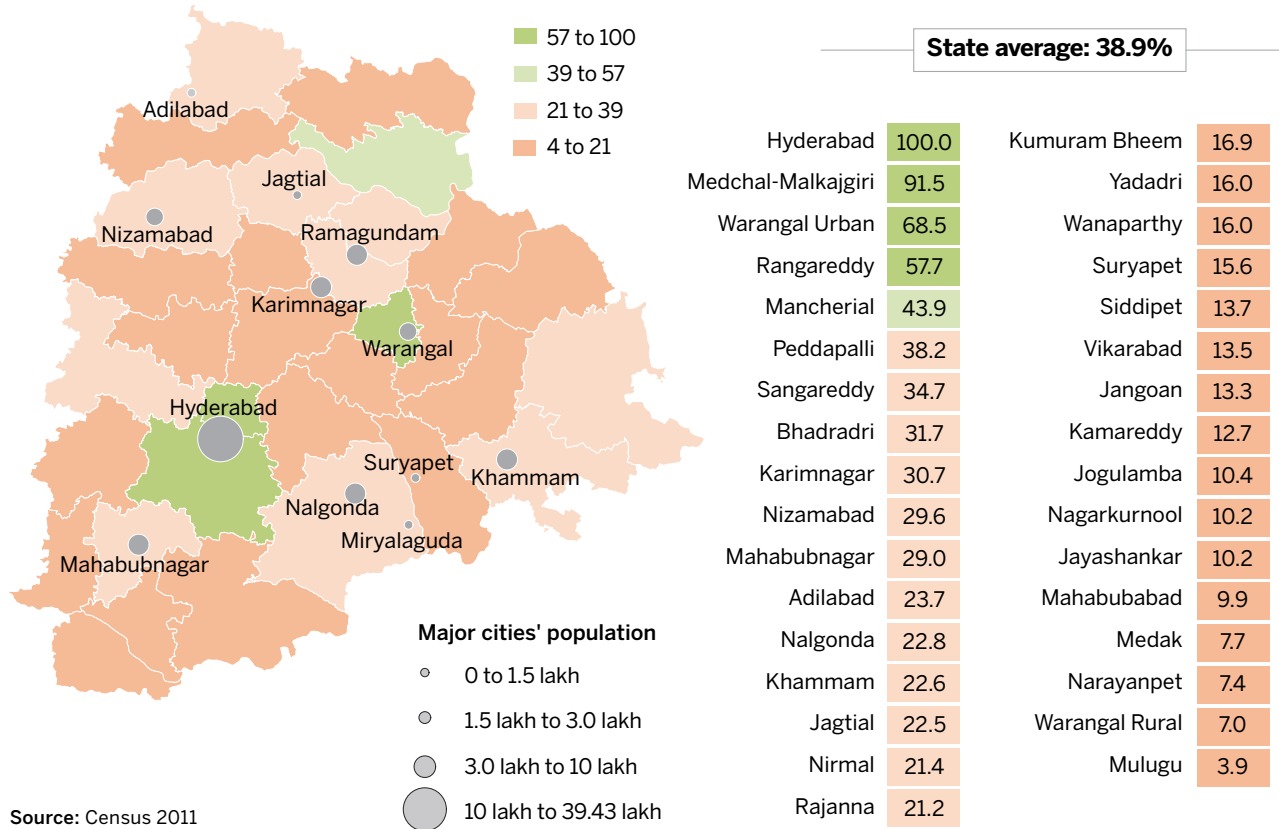
As per the 74th Constitutional Amendment, several aspects of urban governance, such as urban planning, regulation of land use, water supply and sanitation are under the purview of Urban Local Bodies (ULBs). There are currently 141 ULBs in the state — out of which 97 ULBs come under the purview of the Telangana Town Planning Act, 1920 while the remaining 44 ULBs come under the purview of Urban Development Authorities (UDAs).

To strengthen urban governance, the Government enacted the Telangana Municipalities Act 2019 which guides the administration of ULBs and municipal corporations across the state (except the Greater Hyderabad Municipal Corporation (GHMC)) which is guided by a separate GHMC Act (see section below). Broadly, the new Act aims to make the administration in ULBs more transparent, time-bound, accountable

Figure 14.1

District-wise urban population

% of urban population



Source: Census 2011

and citizen-centric. Salient features of the Act include:

- 1. Citizen-centric governance:** Make urban governance more citizen-centric by establishing at least one Citizen Service Centre in each municipality that offers municipal services online
- 2. Promote greenery:** Protect the environment through Green Action Plans in each municipality, prepared by District Level Committees which are headed by the District Collector
- 3. Save water:** Municipal Councils are mandated to conduct regular water audits
- 4. Improve sanitation:** Prepare City Sanitation Plans for all municipalities

5. Improve sewerage systems: Prepare town maps for drains and upgrade existing sewerage systems

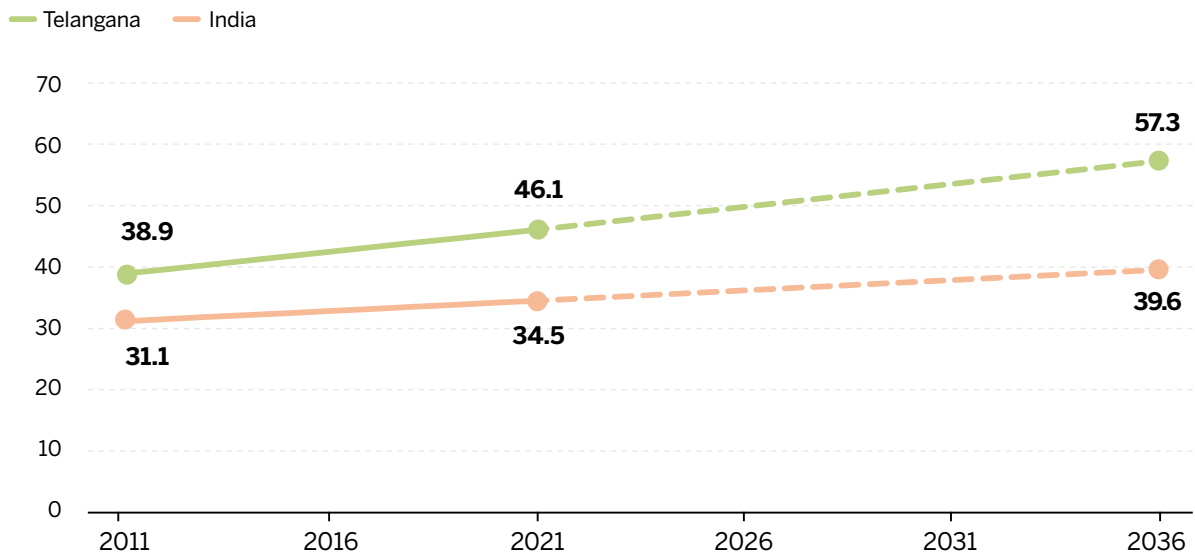
6. Facilitate development: Issue building construction permissions instantly, based on self-certification; allow citizens to file one common application under the Telangana State Building Permission Approval & Self Certificate System (TSbPASS), instead of approaching different departments for obtaining no-objection certificates. TS-bPASS has been introduced in all ULBs in the state and its main features include:

- No permission required for individual residential buildings with plots up to 75 square yards and height up to 7 metres. Only registration is required and the registration

Figure 14.2

Urban population projections

Share of urban population (%)



Source: National Commission for Population Report (Nov 2019)

fee is only Re. 1 which can be paid with the first property tax assessment.

- Instant online approval for plots upto 500 sq. mtr. and height upto 10 meters, processed through an online based Self-Certification system.
- Single-window approval for all building permissions in plots above 500 square metres and above 10 metres height with approval given in 21 days.
- Occupancy Certificate issued online for buildings in plots above 200 square metres and above 7mts height.

As of 9th March 2021, 12,098 applications were received together by the Directorate of Town and Country Planning (DTCP), GHMC and Hyderabad Metropolitan Development Authority (HDMA). Of these, 3,126 were given instant registration, 8,841 were given instant approval and 131 were given single-window approval.

Strengthening urban governance is the first step towards improving urban development outcomes. In

addition, the Government is also implementing sector-specific schemes to improve outcomes across cities in the state.

14.3.1 Water Supply and Sewerage

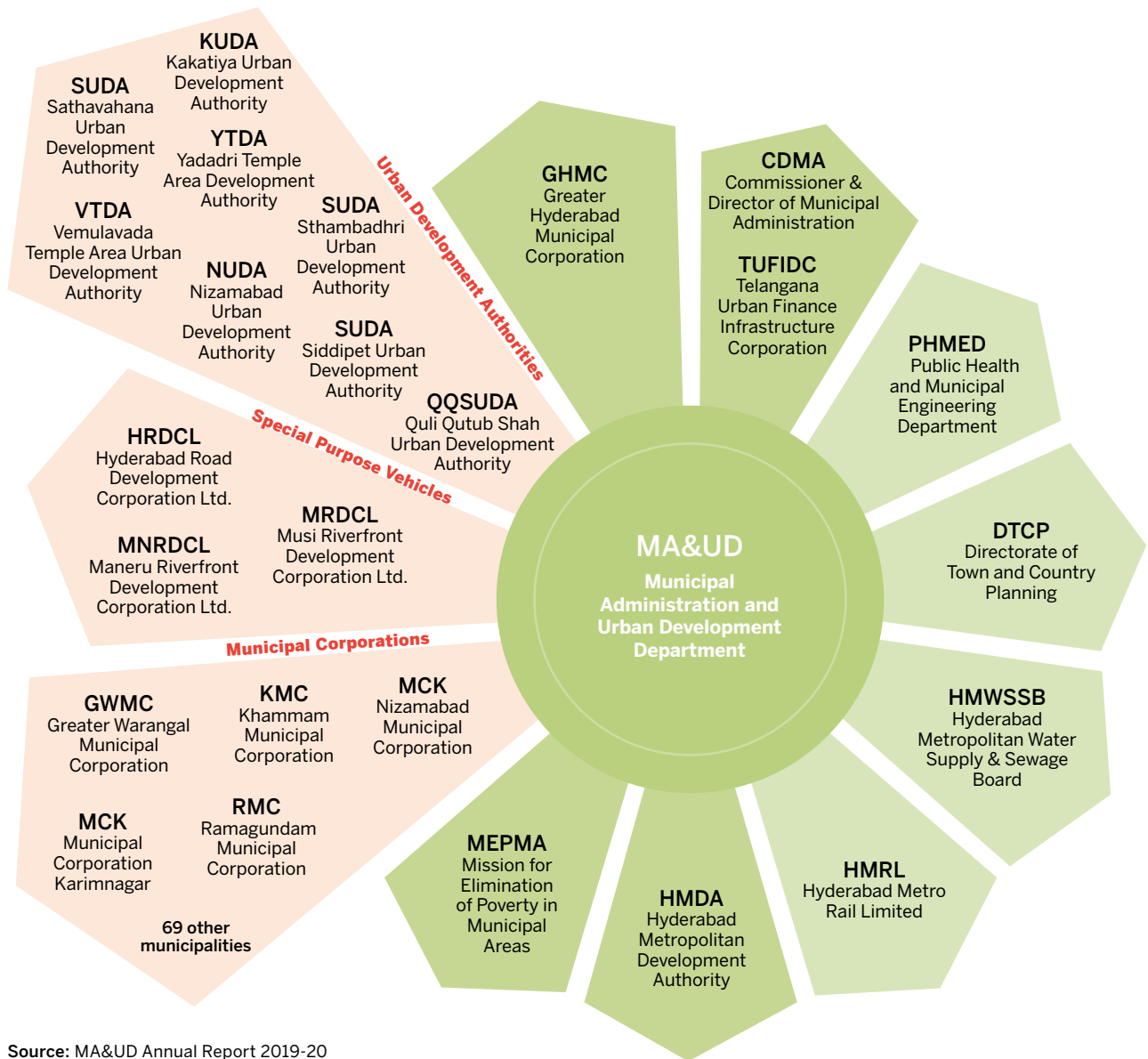
Drinking water, sanitation and hygiene in cities are vital for citizen well-being. The Government is strengthening the existing water supply and sewerage infrastructure facilities in all ULBs.

The Public Health & Municipal Engineering Department is responsible for creating the infrastructure for water supply and sewerage. Under the flagship programme Mission Bhagiratha, the Government is committed to ensuring that all municipal corporations in the state have access to safe, adequate, sustainable and treated drinking water.

The Government has also invested in improving the sewerage system in the state, expanding the sewer network in ULBs by 710 kilometres between 2014 and 2019. Additionally, there are 6 Sewage Treatment Plants in the state with a combined capacity of 107

Figure 14.3

Urban Institutional Structure in Telangana



Source: MA&UD Annual Report 2019-20

million litres per day (MLD).

Water supply and sewerage efforts in the state have also been supported by the Government of India's Atal Mission for Rejuvenation and Urban Transformation (AMRUT) scheme. One of the primary objectives of AMRUT is universal coverage of water supply and sewerage. In the state, 12 cities and

towns are covered by AMRUT (Hyderabad, Warangal, Khammam, Karimnagar, Ramagundam, Nizamabad, Mahabubnagar, Miryalaguda, Suryapet, Nalgonda, Adilabad and Siddipet). Under this scheme, 23 water supply projects and 3 sewerage projects have been completed, while 4 water supply projects and 1 sewerage project is in progress.

14.3.2 Sanitation and Solid Waste Management

The state was declared as open-defecation free (ODF) on 2nd October 2019, as a result of the Government's successful implementation of the Swachh Bharat Mission (SBM). SBM has impacted Solid Waste Management (SWM) in ULBs of the state positively – more than 90% of the households are covered by door-to-door collection services and more than 89% of waste is collected by ULBs across the state (Table 14.1).

14.3.3 Pattana Pragathi

In February-March 2020, the Government organised the Pattana Pragathi (town development) programme in towns and cities in the state. It was a 10-day long drive to promote cleanliness and greenery in urban areas and ensure good sanitation facilities for citizens. The second phase of Pattana Pragathi (Sanitation Drive) was conducted in June 2020. The Government is releasing about Rs. 148 crore every month towards this programme.

14.3.4 Housing

The Government introduced the flagship 2BHK-Housing for All scheme in October 2015, targeting the urban poor. It is a fully subsidised scheme, a paradigm shift from credit- and subsidy-based schemes, and creates a sound economic asset while contributing to the socio-economic growth of the individual and as well as the community. Since its launch, 11.4 lakh

houses have been sanctioned for constructed in urban areas across the state, and Rs. 9,700 crore has been spent, including projects that are works-in-progress (see Welfare chapter for more details).

14.3.5 Service Level Benchmarks

Service level benchmarks (SLBs) are a minimum set of standard performance parameters that are commonly understood and used to track urban outcomes across the country. Sustained benchmarking can help city authorities and utilities identify performance gaps and introduce improvements, ultimately resulting in better services to people. Recognising its importance, the Government carried out the SLB exercise and released SLB Notifications in 2017.

14.3.6 Poverty Alleviation

The Mission for Elimination of Poverty in Municipal Areas (MEPMA) is the state nodal agency for implementing poverty alleviation programmes in all the urban areas. Currently, MEPMA is implementing the following programmes and initiatives:

14.3.6.1 Support to Urban Street Vendors (SUSV)

This component of MEMPA focuses on identification, issue of ID cards, vending certificates, financial inclusion, social security, and other benefits to street vendors. In order to restore the livelihoods of street vendors after COVID-19, the Government of India has introduced the PM Street Vendor's Atmanirbhar Nidhi

Table 14.1

Progress under Swachh Bharat Mission

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Individual Household Latrine (IHHL)	NA	32,206	43,417	51,980	27,280	
Community toilets (seats)	138	52	101	839	379	State declared ODF
Public toilets (seats)	607	10	26	486	1,300	
SHE toilets	NA	4	10	20	22	
Number of ULBs certified ODF	NA	12	12	29	21	

Source: MAUD Annual Report 2019-20

(PM SVANidhi) scheme and Telangana ranks first in the country in its implementation. As part of the scheme, the Government supports street vendors by issuing ID cards and vending certificates, promoting access to finance, and extending access to social security schemes. Cumulatively, around 5.9 lakh street vendors have been identified, which is 4% of the state's urban population. A total of 3.3 lakh loans have been sanctioned to this vendor network. Additionally, the Government is undertaking infrastructure development projects to support street vendors.

14.3.6.2 Social Mobilization & Institution Development (SM&ID)

The main aim of the initiative is to organize all urban poor women into Self Help Groups (SHGs) and enable them to become self-reliant. So far, 1.8 lakh SHGs have been formed in urban areas.

14.3.6.3 Self Employment Program (SEP)

This component focuses on financial assistance to poor individuals and groups to establish gainful self-employment ventures/micro-enterprises while also providing bank linkages to SHGs. So far, 9,627 micro-enterprises have been established through urban SHG women with a total cost of Rs. 82 crore.

MEPMA has facilitated SHG-bank linkages worth Rs. 10,510 crore benefiting 1.4 lakh SHGs so far. Additionally, Rs 334 crore has been released to 90,325 SHGs under the scheme "Vaddileni Runalu (VLR)" to reduce the interest burden on the urban poor. During 2020-21, Rs. 727 crore has been provided to 14,940 SHGs under SHG-bank linkages and Rs. 599 lakh to 637 beneficiaries under SEP.

During COVID-19, MEPMA facilitated credit support of Rs. 18.4 crore to 3,381 SHGs to help them cope and also supported 1,337 SHGs in making more than 23 lakh reusable cloth masks.

14.3.6.4 Employment through Skills Training and Placement (EST&P)

It provides skills to the unskilled/semi-skilled urban youth and supports them to become entrepreneurs. So far, 35,118 candidates have been trained, out of

which 16,924 have been provided placements.

14.3.6.5 Shelter for Urban Homeless (SUH)

This scheme ensures the availability and access to permanent shelters for the urban homeless population. These shelters include basic infrastructure facilities like water supply, sanitation, safety and security. A GIS-based third party survey of homelessness has been conducted in 152 ULBs, which identified 4,503 homeless persons. In total 73 shelters have been sanctioned so far, out of which 34 are functional. During the lockdown period, 26,340 migrant labourers were accommodated in these shelters.

14.3.6.6 National Urban Health Mission (NUHM)

MEPMA has signed an MoU with National Health Mission, Telangana to form Mahila Arogya Samithis (MASs) in Slum-Level Federations. The goal is to promote health education through communities in coordination with the Health Department. So far 7,829 MASs have been formed. An amount of Rs. 1.5 crore has been released to 2,929 MASs in 42 ULBs.

14.3.7 Citizen Services Monitoring System

The Government's urban Citizen Services Monitoring system provides transparent and time-bound services to urban citizens, by working as a bridge between municipal staff and citizens in handling grievance redressal within a specified time. Citizens get open and free access to the status of their applications via SMS alerts, app notifications and web access. At the same time, concerned staff are monitored on their performance. Senior officers and heads of departments (HODs) use the system to monitor the delivery rate of services. This system is presently functioning in 139 ULBs of the state.

14.3.8 Financing Infrastructure and Service Delivery

The development of urban infrastructure is an integral part of modern city expansion processes. The ability

of ULBs to invest in infrastructure and service delivery is partly determined by their ability to raise revenues. Therefore, the Government is committed to increasing ULB revenues efficiently.

Property tax is the biggest source of revenue for ULBs, constituting 27% of total revenue. To encourage prompt property tax payment and to improve collection efficiency, a 5% rebate is provided for early payments. To further encourage such practices, HOD-level monitoring has also been initiated. As a result, transactions increased and the collection of property tax increased across all ULBs.

Another important organization for ULB finances is the Telangana Urban Finance and Infrastructure Development Corporation Limited (TUFIDC), which was incorporated in 2014 and serves as the nodal agency for implementing all state and central Government-funded schemes in ULBs. TUFIDC is designated as State Mission Directorate for flagship programmes of the Ministry of Housing and Urban Affairs (MoHUA), Government of India: Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and the Smart City Mission. In addition to acting as a financial intermediary for the Government of India Schemes, TUFIDC is providing lending support to ULBs for taking up urban infrastructure development works.

14.4 Developing Hyderabad

Hyderabad has become one of the most sought-after investment destinations in India for IT and other companies. It has been declared the 'Most Liveable City' in India for the fifth consecutive year as per Mercer's Quality of Living Index, ranking highest among the seven Indian cities surveyed. The rapid rise in real estate development has also yielded Hyderabad the tag of 'second-fastest growing city in Asia' in a study conducted by the global real estate company JLL in 2019.

Since the formation of the state, the Government has made efforts across sectors to accelerate development in the city, while ensuring a conducive environment

Table 14.2

Status of complaints/services received online and through mobile app (as of January 2021)

Items	Complaints	Services	Total
Received	2,65,634	1,68,354	4,33,988
Redressed	2,48,344	1,60,767	4,09,111
Pending	17,290	7,587	24,877

Source: Urban Citizen Services Monitoring System

Table 14.3

Demand and Collection of Property Tax for ULBs other than Hyderabad

Year	Total demand (in Rs. crore)	Total collection (in Rs. crore)	Collection as a % of demand
2016-17	331	285	86.1
2017-18	359	328	91.3
2018-19	501	446	89.0
2019-20	650	561	86.3

Source: CDMA

for the growth of businesses and the well-being of citizens. Since the formation of the state, a total capital expenditure of Rs. 67,149 crore has been incurred on various infrastructural projects across the city.

14.4.1 Governance

14.4.1.1 New GHMC Act

The new Greater Hyderabad Municipal Corporation (GHMC) Act introduces key amendments to improve the governance of the city. It implements a 50% quota for women in the GHMC Council and allocates 10% of the GHMC budget to a Green Budget. It also involves people in municipal governance by creating four Citizens Committees, together constituting a significant strength of 15,000 people. These committees run activities such as increasing green

coverage, solid waste management, prevention of public property encroachment, promotion of sports and so on.

The total expenditure incurred by GHMC from 2014 to August 2020 is Rs.15,724 crore. The highest share of the expenditure has been on infrastructure, followed by housing.

14.4.1.2 Ease of Getting Permissions and Licenses

GHMC has made the process of permissions and approvals much simpler for citizens. For instance, the Development Permission Management System (DPMS) - Online Building Plan Approval System and the Transfer Development Right (TDR) Policy has eased the process of land acquisition. Consequently, the city has seen a 100% increase in the total built-up area for commercial projects since 2015. As another example, GHMC has made the pet licensing process simpler and hassle-free, by shifting it online.

14.4.1.3 Hyderabad Metropolitan Development Authority (HMDA)

The HMDA was set up to plan, coordinate, supervise, promote and secure the planned development of the Hyderabad metropolitan region. It coordinates the development activities of municipal corporations, municipalities and other local bodies, including the Hyderabad Metropolitan Water Supply and Sewerage Board, Telangana Transmission Corporation, Telangana Industrial Infrastructure Corporation, Telangana State Road Transport Corporation, among others. Since the formation of the state, HMDA has spent Rs. 1,067 crore in various development projects, such as flyovers, roads and parks.

The Government has recently sanctioned a 'Regional Ring Road' (RRR) around Hyderabad and Secunderabad, a 340-kilometre and Rs. 17,000 crore project. This road is about 30-50 kilometres away from the existing Outer Ring Road (ORR) and will be taken up in two parts. The northern part of 158 kilometres will connect Sangareddy, Narsapur, Toopran, Gajwel, Yadadri, Pragnapur, Bhongir and Choutuppal while the southern part of 182 km is connecting Choutuppal,

Ibrahimpattanam, Kandukur, Amangal, Chevella, Shankarpally and Sangareddy. The RRR will cover 40% of the region's population and link 20 towns with national highways. Once completed, the RRR will not only provide a much needed road link for farmers to sell their produce but will also help small, micro and medium enterprises set up cold chains, agro processing units, IT parks, new townships and so on.

Finally, the Government has launched the HMDA Truck Dock Logistics Park spread over 40 acres at Batasingaram. The park has been jointly developed by HMDA and Truck Dock in the public-private partnership (PPP) mode at an investment of Rs. 40 crore.

14.4.2 Health and welfare

14.4.2.1 Annapurna Meals

The Government is implementing the largest state-level food security intervention in the country through the Annapurna scheme. The scheme provides affordable and hygienic food at just Rs. 5 per meal. With eight centres in 2014, there are now 150 centres serving more than 35,000 lunches per day. There are 71 centres which serve dinner as well. Since the formation of the state, the Government has spent Rs. 150 crore towards this scheme. During the COVID-19 lockdown, Annapurna meals were provided totally free of cost within GHMC limits.

14.4.2.2 Basti Dawakhana

The GHMC along with the Commissioner, Health and Family Welfare Department, has established Basti Dawakhana (Health and Wellness Centres) within GHMC limits. These are located inside slums to meet health care needs of the urban poor, by making essential primary health care services accessible and reducing their out of pocket health expenses. Currently, 224 Basti Dawakhana are functional in Hyderabad, and the total expenditure incurred is Rs. 30.5 crore (see Health chapter for more details).

14.4.3 Water and Sanitation

14.4.3.1 Swachh Bharat Mission

Under Swachh Bharat Mission (SBM), GHMC has

constructed 2,133 Individual Household Latrines (IHHL) and 376 public toilets, earning the city an Open Defecation Free Plus Plus (ODF++) certification. (A city can be notified as SBM ODF++ if, at any point of the day, not a single person found defecating or urinating in the open; all community and public toilets are functional and well maintained; and the faecal sludge and sewage are safely managed and treated, with no discharging of untreated sewage in drains, water bodies or open areas.)

This year GHMC is aspiring for the Water Plus (Water +) certification (a city can be declared Water Plus if all wastewater released from households, commercial establishments etc. is treated to a satisfactory level before releasing the treated wastewater to the environment). The state is also in the process of augmenting capacity of sewerage treatment plants in Hyderabad. Similarly, the 19.8 MW capacity waste-to-energy plant already in operation in Hyderabad is being increased to 48 MW. Rs. 1,716 crore has been spent from 2014 to August 2020 towards solid waste management initiatives.

In Swachh Survekshan 2020, an annual survey of cleanliness, hygiene and sanitation across cities and towns in India, Hyderabad was ranked 23rd out of 4,384 cities and towns and won the 'Best Mega City in Citizen Feedback' award.

14.4.3.2 Hyderabad Metropolitan Water Supply and Sewerage Board (HMWSSB)

HMWSSB ensures the provision of basic water and sanitation amenities to the people of Hyderabad and also rehabilitates, strengthens, and improves the sewer network of the core city. Work undertaken by the board includes: construction of storage reservoirs to supply water to residents on the periphery of GHMC; laying of pipelines to supply Godavari river water to other areas; water supply connections to BPL families; and so on. The Government is providing free water supply upto 20,000 litres per month to those slum-dwelling communities in Hyderabad who possess metered connections. With effect from December 2020, they

are given zero water bills. HMWSSB provides a septage treatment facility and Faecal Sludge and Septage Management (FSSM). The Board deployed 76 Mini Sewer Cleaning Machines to prevent manual cleaning of sewer chokages. Since 2014, the total expenditure incurred by the Board is Rs. 9,764 crore, with the highest investments being in the Godavari Drinking Water Supply Project and the Krishna Drinking Water Supply Project.

14.4.4 Transport

14.4.4.1 Hyderabad Road Development Corporation Limited (HRDCL)

The HRDCL serves as a Special Purpose Vehicle (SPV) for road construction with an emphasis on link roads to major highways. The goal is to reduce delays, increase safety and create a free-flowing road network. The HRDCL identified 126 kilometres of missing links and slip roads on developed corridors — of which around 45 kilometres of roads have already been constructed.

14.4.4.2 Strategic Road Development Plan (SRDP)

The SRDP was formulated to improve road transit facilities in Hyderabad so as to enable safe driving, minimize travel time, increase average journey speed, and reduce air pollution levels. Its estimated budget is Rs. 25,000 crores. Eighteen works (9 flyovers, 4 underpasses, 5 bridges of different kinds) with a cost of Rs. 1,011 crore have been completed, while 20 works with a cost of Rs. 4,742 crore are currently in progress.

14.4.4.3 Hyderabad Metro Rail

The Hyderabad Metro Rail project is a mass transit solution to address the increasing traffic congestion and pollution levels in Hyderabad city. Currently, it covers 69 kilometres and is the world's largest project implemented under a Public Private Partnership (PPP). So far, the Government has spent Rs. 2,730 crore, the Government of India has spent Rs. 1,204 crore and the private sector partner, L&T Metro Rail, has spent Rs. 18,103 crore on the project (for more details see the Infrastructure chapter)

14.4.5 Environment

14.4.5.1 Urban forestry

To enhance the health and well-being of the residents of Hyderabad, GHMC is developing parks, theme parks and urban forest blocks in the city. Under the Government's flagship programme, Telangana Ku Haritha Haram (TKHH), lakhs of trees are planted in open spaces, railway corridors, service roads, etc. (See Forestry & Environment chapter for more details).

Since 2014, GHMC, HMDA, the Forest Department and other agencies have spent a total of Rs. 559.4 crore towards urban biodiversity (Rs. 250 crore on parks; Rs. 158 crore on urban forest parks; and Rs. 151 crore on conservation blocks with the city).

The Arbor Day Foundation jointly with the Food & Agriculture Organisation of the United Nations Organization has declared Hyderabad as one among the 'Tree Cities of the world'. Hyderabad is the only city in the country to have been selected for this recognition in response to its commitment to growing and maintaining urban forestry.

14.4.5.2 Lake protection and revitalization

The Government has sanctioned Rs. 38 crore for the beautification of Hussain Sagar lake in Hyderabad. HMDA has also undertaken the development and beautification of 20 lakes inside the ORR but which fall outside GHMC jurisdiction. The total amount spent on lake rejuvenation since 2014 is Rs. 376.8 crore, of which Rs. 289.3 crore was spent on the Hussain Sagar lake.

14.5 Other Initiatives

14.5.1 Vemulawada Temple Area Development Authority

The Government constituted Vemulawada Temple Area Development Authority (VTADA) under the Telangana Urban Areas (Development) Act, 1975 for the development of the Vemulawada Temple complex and its surrounding areas. Apart from the development

of temples in the complex, VTADA is also constructing bus stations and parking spaces for visitors.

14.5.2 Yadadri Temple Area Development Authority

The Yadadri Temple Area Development Authority (YTDA) was also constituted under the Telangana Urban Areas (Development) Act, 1975 to aid the development of the Yadagirigutta Temple complex and its surroundings. Its responsibilities include developing tourist circuits, supplying the required water for temple use, etc. YTDA is working for the development of Sri Lakshmi Narasimha Swamy Temple, Yadagirigutta and expanding the existing hilltop area. The Government released a sum of Rs. 85.6 crore during the year 2019-20 to YTDA.

14.5.3 Musi Riverfront Development Corporation Limited

The Government has created the Musi Riverfront Development Corporation Ltd. for the comprehensive revitalization of Musi river. Its activities include cleaning and clearing of debris and shrubs along the river, spraying of Pyrosin to reduce the mosquito menace, building walkways on the river banks, etc., Also, two hydraulic excavators are engaged by MRDCL to carry out cleaning of Musi River throughout the year.

14.6 Way Forward

The Government is striving to enable the personal and economic growth of the state's urban citizens through action on multiple fronts: strengthening urban local governance; developing infrastructure; and providing basic amenities. Through various acts and laws, the Government is continuously improving the quality of life for every citizen in Hyderabad, and other cities and towns across the state. As almost half the state is expected to live in cities and towns by 2026, the Government is committed to keep pace with the growth, and set an example for urban development across the country.

CHAPTER 15

GOVERNANCE



Key Highlights

Good governance is the foundation for better development outcomes. The Government has taken significant steps to improve governance in the state. Key highlights include:

- Taking governance and service delivery to the doorsteps of people by reorganizing the districts, mandals, towns and villages.
- Improving the quality of services and the experience of citizens—“ease of living”—through various digital initiatives to enable people to access services without the hassles of time-consuming office visits and onerous paperwork.
- Strengthening rule of law to protect and empower citizens.
- Orienting all Government work towards improving developmental outcomes with a special focus on Sustainable Development Goals.



15.1 Decentralization: Bringing Government Closer to the People

A fundamental principle for better governance is decentralization. Effective decentralization can improve policymaking and service delivery by bringing governments closer to the people so that governments have better information on local conditions, quickly respond to problems, and provide more support to citizens. In line with this, the Government of Telangana has increased the number of districts in the state from 10 to 31 in October 2016 and further to 33 in February 2019. Likewise, the number of Mandals increased from 464 to 593, revenue divisions from 43 to 74, and Gram Panchayats from 8,368 to 12,770 (Table 15.1).

In addition to this decentralization, the Government has also strengthened and empowered local governance structures, most notably through the Telangana Panchayat Raj Act 2018, Telangana Municipalities Act 2019 and Greater Hyderabad Municipal Corporation (GHMC) (Amendment) Act 2020 (see the Panchayat Raj, Palle Pragathi and Urban Development chapters). The formation of these districts ensures that people from all parts of the state have access to the same

Table 15.1

Reorganization of Districts, Revenue Divisions, Mandals and Gram Panchayats in the state

	2014	2021
Districts	10	33
Revenue Divisions	43	74
Mandals	464	593
Gram Panchayats	8,368	12,770
Municipal Corporations	6	13
Municipalities	68	128

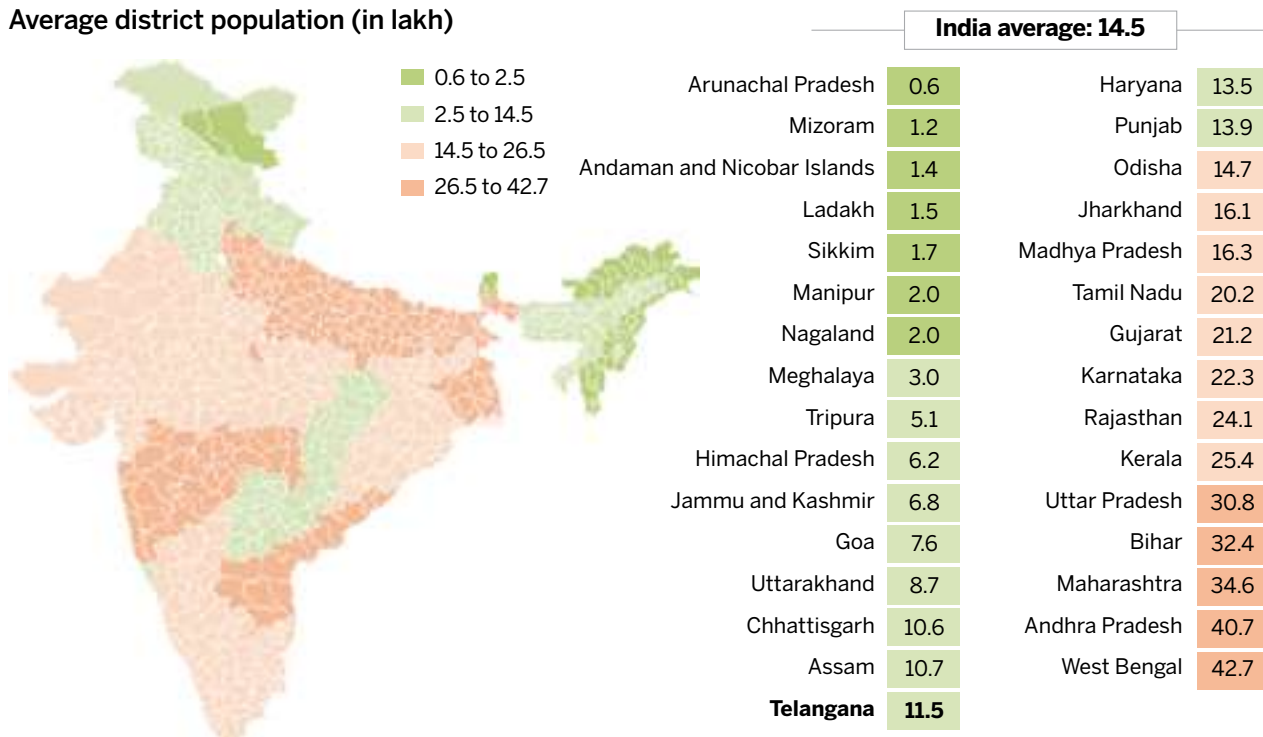
Source: Census 2011 and telangana.gov.in

level of opportunities and ensures that they have greater access to important functionaries. The quality of administration and service delivery per capita also gets enhanced as district officials cater to smaller populations. The districts and mandals in the state have the smallest populations in the country. The average population per district is 11.5 lakh, almost 80% of the national average of 14.5 lakh. The state's average mandal population is 63,600, almost 40% of the national average of 1.47 lakh. Only six states in the country have a lower average block population.

Figure 15.1

Average district population across states in India

Average district population (in lakh)



Source: Local Government Directory, Ministry of Panchayati Raj, Government of India and Report of the Technical Group on Population Projections (November 2019), Ministry of Health and Family Welfare, Government of India

Finally, the stable and efficient government, since the formation of the state has led to the implementation of innovative and dynamic schemes and programmes, which in turn has taken the state to greater heights in development and welfare.

15.2 Improving Citizen Experience

While the Government is committed to delivering programmes and implementing policies to improve outcomes, it is equally committed to improving people's experience in accessing programmes. The goal is to ensure that citizens can access schemes easily by minimizing paperwork, costs and time taken to receive benefits ('na darkasth, na daftar'). For instance, when the Government launched Rythu Bandhu and Rythu Bima, these schemes were made available to people without the need for filling application forms or visiting Government offices.

15.2.1 Improving Citizen Experience Through Technology

One important way the Government is improving citizen experience is by leveraging the state's comparative advantage in technology to improve administration and governance. All Government departments are using technology to improve transparency and accountability, streamline processes in programme delivery, and ultimately enhance citizen experience. Key initiatives include:

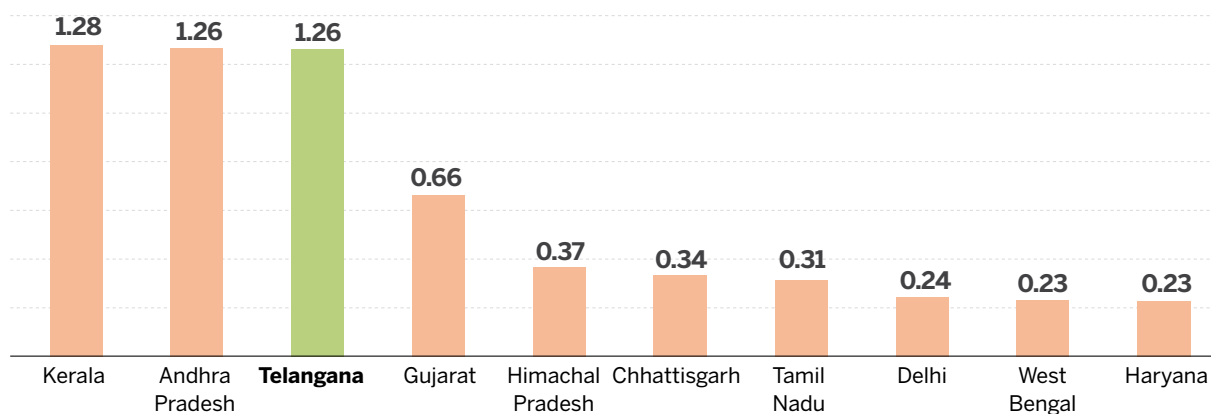
15.2.1.1 MeeSeva

MeeSeva Service Centres provide various government services to citizens, such as application for various government services including food security and school registration. Some of the centres are run by youth as a franchise, thus enabling self-employment. MeeSeva Service Centres are instrumental in delivering

Figure 15.2

E-transactions per 1,000 population from June 2014 to February 2021

E-transactions (lakh per 1,000 population) for the top 10 states



Source: e-Taal

services digitally in the state. It employs a single-entry portal for the entire range of government services. Because of MeeSeva and other services, Telangana has the third-highest number of e-transactions per capita across the country between 2014 and 2021 according to the e-Taal website (Figure 15.2).

15.2.1.2 Urban Citizen Services Monitoring

The Urban Citizen Services Monitoring system provides transparent and time-bound services to urban citizens. It works as a bridge between municipal staff and citizens in handling service applications, grievances, and other requests (for instance, restoring faulty streetlights, clearing debris, solving issues relating to water supply and drainage, etc.) effectively and quickly. Complainants can track the status of their applications via SMS alerts, app notifications and other means. The system is currently functional in 139 ULBs of the state.

15.2.1.3 Improved Land Records Management: Dharani Portal

Recognizing the importance of land records management for land transactions, the Government launched the Land Records Updation Program. New

'Pattadar Passbook cum Title Deeds' were issued to the land owners of undisputed lands. The lands which were under litigation or needed further enquiry were listed for tackling in due course of time.

Building on this, the Government has introduced the Dharani web portal by integrating the functions of the departments of land administration and registrations. The Dharani web portal has been a path-breaking initiative in the realm of agriculture and land records management. The portal now makes it easy for landowners to check the details of land records and to perform different functions (such as sales, transfers, etc.) without visiting Government facilities. It serves as a repository of agricultural properties under one platform. It also provides useful information on agricultural properties, such as market values and encumbrances (mortgage or claims on the land). It brings accountability in the Department's work, since officials no longer have any discretion. It has led to elimination of corruption and brought about transparency in registration and land records maintenance. Currently, registration and mutation of agricultural lands are taking place in 593 Mandals, providing responsive and hassle-free citizen service. In less than five months from the date of its launch,

more than 3.29 lakh transactions, including 1.06 lakh pending claims for mutation of records, and 3.84 lakh payments (amounting to Rs 361 crore) have been made on the Dharani portal.

15.2.1.4 T-Wallet

T-Wallet is the digital wallet app of the state Government and the first by any state in the country. It is an 'anytime-anywhere' digital payment option available for everyone, with the objective to increase the number of digital transactions in the state. Citizens can use T-Wallet through their smartphones, laptops or computers to make payments for private as well as government transactions (such as electricity bills, challans, etc). Citizens can also utilize these services through any MeeSeva centre in the state.

15.2.1.5 T-App Folio

T-App Folio is an m-governance (mobile governance) initiative that leverages the deep penetration of mobile usage in the state to deliver services to citizens. It is an integrated app for citizens to access Government services. The app, as a part of Mee Seva 2.0, provides services like MeeSeva services, RTA services, fee payments and bill payment services, etc. It is available in Telugu and English. T-App Folio also includes the RTA m-Wallet, a digital initiative by the Transport department that stores all transport-related documents (such as driving license, registration certifications, and insurance documents on a single app).

15.2.1.6 Real-time Digital Authentication of Identity (RTDAI)

RTDAI technology enables a document-less, presence-less governance mechanism, which simplifies key processes of government departments, such as ID verification during service delivery. It makes service delivery highly accurate and independent of human judgement, while ensuring a proper audit trail for accountability.

One prominent way in which RTDAI has been employed in Telangana is for disbursement of pensions. Pensioners can register on the T-App Folio and upload their Life Certificate through Selfie (PLCS) method. Through

RTDAI, the 'liveness' of the image is checked to ensure that the pensioner is alive; it is then matched with the person's photograph in the database; after which, their demographics are also matched with a government-issued ID. Till December 2020, more than 49,000 pensioners, who would otherwise have to physically travel to government offices, have benefited.

15.2.1.7 Common Service Centres (CSC)

CSCs deliver Government of India's digital services in rural and remote areas. There are 12,719 CSCs in Telangana, a 6-fold increase from 2,140 centres in 2014. CSCs have been successful in delivering several key services to citizens:

- CSC's financial services platform DigiPay is helping to disburse Direct Benefit Transfers. From April 2020 to February 2021, Rs. 175 crore has been disbursed through it.
- Through CSCs, 3.3 lakh farmers have enrolled for PM KISAN, 6.6 lakh have registered for Kisan Credit Card, and 14,780 have received Krishi Vigyan Kendra (KVK) advisories.
- As part of 'Digital Village' Phase-1 in the state, 31 villages have started focusing on financial awareness, digital literacy, TeleMedicine, and TeleLaw, among other services.
- 1,146 Gram Panchayats have started using the internet via BharatNet, a programme that provides digital connectivity to rural areas.
- 2,496 CSC Grameen e-stores have been set up in the state. These were initiated during COVID-19 to allow rural citizens to order digitally and receive doorstep delivery of products. So far, they have delivered 33,109 orders worth Rs. 1.8 crore in rural areas of the state.

15.2.1.8 eNAM

To strengthen the functioning of Agricultural Produce Market Committees (AMCs), the Government has implemented eNAM in the state. eNAM is Government of India's online trading portal for agricultural commodities that caters to farmers, traders and buyers. eNAM is helping in better price discovery and providing facilities for smooth marketing of farmers' produce. In 2017, the AMC of Nizamabad was awarded

the Prime Minister's Excellence Award for successful implementation of eNAM.

15.2.2 Initiatives to Improve Internal Government Functioning and Transparency

In addition to improving citizen experience, the Government is also using technology to improve internal functioning and transparency to deliver better services:

15.2.2.1 Aadhaar-based Attendance System

The Telangana State Technological Services has developed an Aadhaar-based Attendance System (ABAS) to streamline the process of recording attendance for employees and students to bring about transparency in the system. The Greater Hyderabad Municipal Corporation (GHMC) uses it to capture the attendance of daily-wage workers, who are paid wages based on the amount of work done. This has led to greater savings in time, money and manpower. Public schools, colleges and welfare hostels have also been using it to monitor the attendance of students, boarders and teachers, in an effort to reduce wasteful expenditure and improve quality of education.

15.2.2.2 eProcurement

This is a platform used by all departments, PSUs, Urban Local Bodies (ULBs) and universities in the state for easy and efficient purchase of goods and services. It makes the procurement process transparent and leads to cost savings. It also allows users to carry out the traditional tendering process electronically, reducing the process time. Since the formation of the state, 3,44,616 tenders have been floated on the eProcurement platform.

15.2.2.3 Government eMarketplace (GeM)

GeM is similar to eProcurement, as it facilitates the purchase of goods and services by government departments, organizations and PSUs. It provides

tools such as e-bidding and reverse e-auction to enhance transparency, efficiency and speed, and helps users get the best value for their money. There are 28,749 sellers registered on eMarketplace and a total of Rs. 549.3 crore worth of transactions has been made so far.

15.2.2.4 eOffice

eOffice is a paperless and contactless initiative that aims to support governance by making inter and intra-government processes more effective and transparent. It significantly increases the speed of decision making in government, and assures data security and integrity. It increases accountability and makes it easier to track changes, since every action taken on a file is recorded electronically. In the state, eOffice has been adopted by almost all government departments, colleges, district offices, ULBs and is in process to be implemented in mandal-level offices. It was especially helpful during the COVID-19 lockdown, given there was limited mobility.

15.2.2.5 Initiatives to Manage COVID-19

Apart from the use of IT tools and technology to improve administration in the state, the government has also leveraged technology for efficient governance during the COVID-19 pandemic. The COVID-19 Data Platform was developed in association with NASSCOM to help data-driven decision-making during the pandemic, for issues such as augmenting medical capacities or the systematic unlocking of industries after the lockdown. Additionally, the government used live CCTV video feed and image recognition algorithms to detect face mask violations by citizens and enforce precautionary measures for COVID-19.

15.3 Law and Order

Rule of law is a crucial factor for not just protecting and empowering citizens but also creating the conditions for economic growth. The Government is committed to maintaining law and order in the state. Since the formation of the state, the Government has implemented various processes and technology

initiatives to enhance the safety and security of every citizen.

15.3.1 Improving Surveillance Through Community Initiatives

15.3.1.1 Community CCTV Surveillance

The Community CCTV surveillance system is a major initiative that allows surveillance of public areas across the state. Under this system, communities join together to invest in the CCTV Project and implement it in their neighbourhoods under the guidance of law enforcement agencies. It acts as a strong deterrent to reduce/eliminate crime and it is vital to provide adequate protection to citizens. In total, 6.59 lakh cameras have been installed in communities across Telangana as of December 2020.

15.3.1.2 Hawk Eye App

As part of citizen friendly and responsive policing, a mobile app 'Hawk Eye', has been introduced to empower the public to become Citizen Police. As of March 2020, about 31,22,563 citizens have downloaded the application.

15.3.2 Modernizing the State Police Force

The state police force has strategically invested in modernizing the police stations to exponentially improve and strengthen the services delivered to citizens. The environment was transformed into a receptive place for citizens to register their complaints and seek help from the police. The features of these modern police stations include a reception space and mini Command and Control Rooms for effective tracking and monitoring of police performance. Other initiatives include GIS platforms for location-based services such as geofencing of police stations, geo-mapping of crimes and criminals, geo-tagging of CCTV cameras and incidents, and tracking citizen complaints. In addition, the Government has also established Command and Control Centres across all districts and commissionerates in the state.

15.3.3 Special Initiatives

Two special initiatives in the state to enhance law and order are SHE Teams and Bharosa Centres. They were started as pilot projects in Hyderabad City, and given their success, the Government has decided to extend them to all the districts of the state. It also established a Women Safety Wing to monitor the SHE-Bharosa Centres.

15.3.3.1 SHE Teams

SHE Teams is a division of the state police that works to enhance safety and security of women and children in the state. They deal with offences such as eve-teasing, stalking, harassment, in public places, work places, educational institutions, etc. At present, there are 331 SHE Teams in the state. All data regarding the complaints received and day to day performance of SHE Teams is stored using specially designed software. In January 2020, the Women Safety Wing of the state launched a WhatsApp number for victims to report harassment, and the Women Safety Wing forwards the complaint to the respective SHE team unit. From 1st January 2019 to 31st December 2020, SHE teams received a total of 18,095 complaints.

15.3.3.2 Bharosa Centres

Bharosa Centres is an initiative to provide victims of crimes with all the required support, such as legal advisory, personal counselling, education and awareness programmes, and other support through NGOs.

15.4 Towards Outcome-Oriented Governance

The Government implements several initiatives to improve the quality of life for citizens. While it closely monitors the outputs of these initiatives (in terms of progress of activities and implementation status), it is cognizant that these schemes should improve outcomes (in terms of the impact these schemes have on citizens and organizations within the state). Accordingly, it closely monitors progress made against the Sustainable Development Goals

Box 15.1

Independent Household Surveys and Phone-based Surveys to Improve Service Delivery and Outcomes

While the Government is committed to using administrative data to improve service delivery, it also recognizes the limitations of administrative data. Firstly, administrative data is limited to people accessing Government programmes and services. Since the Government is committed to improving welfare for all citizens, it is important it understands the experiences of all citizens—including those availing private services. Secondly, administrative data does not provide information on many of the SDGs and key development outcomes (for example, while administrative data might reveal receipt of Rythu Bandhu transfers, it does not inform the Government how farmer incomes are changing).

To improve effectiveness of governance, the 15th Finance Commission (FC) has suggested performance-based grants to improve statistical systems e.g., innovations for improvements in administrative statistics. The FC has further recommended providing grants to aspirational districts and blocks, with a condition that an independent third party sample survey be conducted to ensure fair and transparent competition amongst districts and blocks. The Government of India, in its action taken report on FC recommendations on performance-based grants, has stated that it has accepted the recommendations in-principle. During the Sixth Governing Council Meeting, NITI Aayog recommended states to implement Aspirational Blocks programmes, on the lines of the Aspirational District Programme. Six states have already identified additional backward blocks and nine other states have initiated action.

An independent representative household survey may be appropriate for incorporating the NITI Aayog and FC recommendations. This would allow the Government to generate outcomes data and use that to improve service delivery. This survey could be used to track and improve performance

in districts and blocks with weak development outcomes.

While field-based data collection is important, the Government also needs more frequent data (on beneficiary experience especially) to inform service delivery. One way to do this would be to use phone-based surveys to systematically collect data on beneficiary experience. The Government has already established call-centres in various departments. A systematic phone-based data collection system would call a sample of households to generate real-time, representative insights for the Government to act on and improve service delivery.

For instance, when the Government launched the Rythu Bandhu scheme, it monitored implementation by calling beneficiaries in 131 randomly selected mandals to ask if they received their transfers. A research study found that phone-based monitoring improves the process of transfers (Muralidharan et al., 2020). According to the study, farmers in areas with phone-based monitoring were more likely to receive their cheques on time as field level functionaries knew transfers to farmers were being tracked. The study observed that this is a highly cost effective intervention, with the calls enabling faster receipts of transfers worth Rs. 7 crore at a cost of Rs. 25 lakh.

The Government is exploring further ways in which it can use innovative data collection methods to improve performance of personnel and, consequently, service delivery.

References

Muralidharan, K., Niehaus, P., Sukhtankar, S. and Weaver, J., 2018. Improving Last-Mile Service Delivery Using Phone-Based Monitoring. *American Economic Journal: Applied Economics*. Available at: <http://bit.ly/2OsIF71>

(SDGs). The emphasis on SDGs is reflected in the state's performance on NITI Aayog's Sustainable Development Goals (SDG) Index. Overall, the state was ranked third in SDG Index 2019-20. The state has also scored the highest in decent work and economic growth (SDG 8) and reduced inequalities (SDG 10).

Effective progress monitoring is possible only with robust information systems capturing both outputs and outcomes. Therefore, the Government is committed to improving the quality of its administrative data systems. One noteworthy example of this commitment comes from the Panchayat Raj and Rural Development Department's (PR&RD) efforts to improve the data systems used in tracking rural governance across Gram Panchayats (GPs). The systems have been strengthened in two significant ways. Firstly, the choice of indicators used to track governance reflects bias towards outcomes and not just activities (e.g. capturing road cleanliness rather than the length of roads cleaned or counting the number of functional street lights rather than total number of street lights). Second, a new robust supervision system ('nested supervision') is being implemented to improve the quality of data captured across all the GPs.

Unlike regular supervision processes where attention is largely focused on monitoring frontline functionaries, nested supervision places greater emphasis on monitoring the performance of immediate subordinates. The management of managers, in addition to management of individual contributors (frontline functionaries), is a basic management principle underpinning high-performing large-scale organizations. For example, in the case of GP performance, Mandal Panchayat Officers (MPOs) are responsible for monitoring the performance of Panchayat Secretaries. To do this, MPOs regularly visit and inspect GPs. Around 80% of MPOs inspections are assigned by their supervisors, District Panchayat Officers (DPOs). To ensure that these inspections are

effective, DPOs and Division Level Panchayat Officers (DLPOs) also inspect GPs and visit at least 50% of the villages their MPOs inspect (the remaining 50% of villages are inspected at their discretion or based on the guidance from District Collector/Additional District Collector). The additional scrutiny through inspections from DPOs not only helps monitor performance of GPs but also helps track MPO performance. This ensures accountability is maintained at all levels of the administration, strengthens administrative data systems and helps deliver better outcomes.

To further strengthen administrative data systems, the Government also validates administrative data directly from beneficiaries. For instance, in the case of GP governance, citizens are randomly called to validate the performance reported by administrative systems, with a significant majority of these calls made to the GPs inspected by MPOs. Similarly, various departments including Women and Child Welfare, Municipal Administration and Urban Development, Panchayat Raj and Rural Development (MGNREGS), and Food and Civil Supplies use call centres to validate and verify if their programmes are reaching citizens. The Government is looking to build on this and explore other ways in which it can collect data in the state to improve service delivery and outcomes (Box 1).

15.5 Way Forward

Governance is important for states across the world—but it is especially important for nascent states like Telangana. Good governance immediately improves lives but also sets the course for future generations. The past year has simply reiterated the importance of governance. Facing an unprecedented crisis, all levels of the Government came together to curb COVID-19. And in doing so, the Government has discovered new ways to improve governance in the state. Like this, the Government is committed to constantly improving lives and finding better, more efficient ways to do so.





Annexures

- 1** Gross state domestic product at current prices
- 2** Sectoral growth rates of gross state domestic product at current prices
- 3** Sectoral contribution of gross state value added at current prices
- 4** Gross state domestic product at constant (2011-12) prices
- 5** Sectoral growth rates of gross state domestic product at constant (2011-12) prices
- 6** Sectoral contribution of gross state value added at constant (2011-12) prices
- 7** Net state domestic product and per capita income at current prices
- 8** Net state domestic product and per capita income at constant (2011-12) prices
- 9** Gross district domestic product of Telangana from 2017-18 to 2019-20
- 10** Irrigation: completed and partially completed projects
- 11** Mission Kakatiya
- 12** Demographic details of Telangana

Annexure 1

Gross state domestic product at current prices (Rs. crore)

Sl. No.	Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (TRE)	2018-19 (SRE)	2019-20 (FRE)	2020-21 (AE)
1	Agriculture, Livestock, Forestry and Fishing	54,615	67,364	76,631	76,123	75,707	88,979	1,01,390	1,12,315	1,49,643	1,84,392
1.1	Crops	32,368	40,570	47,093	41,706	36,805	43,529	47,457	48,268	74,069	86,883
1.2	Livestock	18,848	22,858	24,878	29,282	33,755	39,816	46,595	56,384	67,131	88,841
1.3	Forestry and Logging	1,917	2,096	2,163	2,465	2,498	3,360	3,684	3,622	3,750	3,849
1.4	Fishing and Aquaculture	1,481	1,839	2,497	2,670	2,649	2,275	3,654	4,042	4,694	4,819
2	Mining and Quarrying	11,061	12,685	12,386	14,706	17,128	19,687	23,234	33,404	35,362	33,404
	Primary	65,676	80,049	89,016	90,828	92,834	1,08,666	1,24,623	1,45,719	1,85,005	2,17,795
3	Manufacturing	62,152	55,431	57,148	54,533	71,032	73,833	82,607	89,680	89,683	83,404
4	Electricity, Gas, Water supply and Other Utility Services	7,835	5,896	8,709	7,340	8,354	7,221	10,455	12,304	15,458	15,405
5	Construction	22,791	23,579	24,582	27,786	28,473	28,554	34,495	37,376	39,665	38,440
	Secondary	92,778	84,906	90,440	89,660	1,07,860	109,608	1,27,556	1,39,360	1,44,805	1,37,249
6	Trade, Repair, Hotels and Restaurants	37,478	44,547	51,275	64,269	74,736	86,693	1,03,866	1,24,031	1,44,710	1,33,225
6.1	Trade and Repair Services	30,487	36,472	44,563	56,974	66,418	77,708	94,286	113,337	133,104	123,031
6.2	Hotels and Restaurants	6,991	8,074	6,712	7,295	8,318	8,985	9,581	10,695	11,606	10,193
7	Transport, Storage, Communication & Services related to Broadcasting	25,318	29,871	32,298	35,866	39,666	42,821	45,361	50,721	56,218	53,798
7.1	Railways	1,614	1,757	1,929	2,004	2,010	2,216	2,546	2,651	3,335	2,993
7.2	Road Transport	14,613	17,158	18,691	20,540	22,633	24,536	27,341	32,164	35,721	32,915
7.3	Water Transport	-	-	-	-	-	-	-	-	-	-
7.4	Air Transport	233	432	345	623	1,126	1,267	1,329	1,058	1,138	1,098
7.5	Services incidental to Transport	3,718	4,844	4,477	4,937	5,048	5,578	5,834	6,069	6,785	6,214
7.6	Storage	175	153	171	178	182	198	172	272	275	282
7.7	Communication & Services related to Broadcasting	4,965	5,527	6,685	7,584	8,665	9,026	8,137	8,508	8,963	10,295
8	Financial Services	21,265	23,632	26,596	30,261	33,123	36,356	40,783	46,628	51,249	53,145
9	Real Estate, Ownership of Dwelling and Professional Services	55,514	69,245	82,307	96,912	1,12,172	1,31,824	1,44,498	1,64,202	1,87,815	1,89,159
10	Public Administration	11,313	12,660	14,338	17,166	21,915	25,574	28,049	28,140	31,502	33,620
11	Other Services	26,709	30,354	35,460	41,536	48,030	58,644	65,440	71,558	79,082	77,413
	Tertiary	1,77,597	2,10,308	2,42,273	2,86,011	3,29,641	3,81,912	4,27,998	4,85,280	5,50,575	5,40,359
12	Total GSVA at Basic Prices	3,36,050	3,75,263	4,21,729	4,66,499	5,30,336	6,00,186	6,80,177	7,70,358	8,80,386	8,95,403
13	Taxes on Products	32,811	37,164	40,929	48,642	57,754	68,906	82,256	91,539	99,943	97,944
14	Subsidies on Products	9,427	10,833	11,078	9,292	1,0,188	10,767	12,383	11,301	14,974	14,974
15	GSDP	3,59,434	4,01,594	4,51,580	505,849	5,77,902	6,58,325	7,50,050	8,50,596	9,65,355	9,78,373

Annexure 2

Sectoral growth rates of gross state domestic product at current prices

Sl. No.	Sector	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (TRE)	2018-19 (SRE)	2019-20 (FRE)	2020-21 (AE)
1	Agriculture, Livestock, Forestry and Fishing	23.3	13.8	-0.7	-0.5	17.5	13.9	10.8	33.2	23.2
1.1	Crops	25.3	16.1	-11.4	-11.8	18.3	9.0	1.7	53.5	17.3
1.2	Livestock	21.3	8.8	17.7	15.3	18.0	17.0	21.0	19.1	32.3
1.3	Forestry and Logging	9.3	3.2	14.0	1.3	34.5	9.6	-1.7	3.5	2.6
1.4	Fishing and Aquaculture	24.1	35.8	6.9	-0.8	-14.1	60.6	10.6	16.1	2.7
2	Mining and Quarrying	14.7	-2.4	18.7	16.5	14.9	18.0	43.8	5.9	-5.5
	Primary	21.9	11.2	2.0	2.2	17.1	14.7	16.9	27.0	17.7
3	Manufacturing	-10.8	3.1	-4.6	30.3	3.9	11.9	8.6	0.0	-7.0
4	Electricity, Gas, Water supply and Other Utility Services	-24.7	47.7	-15.7	13.8	-13.6	44.8	17.7	25.6	-0.3
5	Construction	3.5	4.3	13.0	2.5	0.3	20.8	8.4	6.1	-3.1
	Secondary	-8.5	6.5	-0.9	20.3	1.6	16.4	9.3	3.9	-5.2
6	Trade, Repair, Hotels and Restaurants	18.9	15.1	25.3	16.3	16.0	19.8	19.4	16.7	-7.9
6.1	Trade and Repair Services	19.6	22.2	27.9	16.6	17.0	21.3	20.2	17.4	-7.6
6.2	Hotels and Restaurants	15.5	-16.9	8.7	14.0	8.0	6.6	11.6	8.5	-12.2
7	Transport, Storage, Communication & Services related to Broadcasting	18.0	8.1	11.0	10.6	8.0	5.9	11.8	10.8	-4.3
7.1	Railways	8.8	9.8	3.9	0.3	10.2	14.9	4.1	25.8	-10.3
7.2	Road Transport	17.4	8.9	9.9	10.2	8.4	11.4	17.6	11.1	-7.9
7.3	Water Transport	-	-	-	-	-	-	-	-	-
7.4	Air Transport	85.6	-20.1	80.7	80.7	12.5	4.9	-20.4	7.5	-3.5
7.5	Services incidental to Transport	30.3	-7.6	10.3	2.2	10.5	4.6	4.0	11.8	-8.4
7.6	Storage	-12.6	11.5	4.2	2.4	8.5	-12.9	57.7	1.3	2.7
7.7	Communication and Services related to Broadcasting	11.3	20.9	13.5	14.3	4.2	-9.8	4.6	5.3	14.9
8	Financial Services	11.1	12.5	13.8	9.5	9.8	12.2	14.3	9.9	3.7
9	Real Estate, Ownership of Dwelling and Professional Services	24.7	18.9	17.7	15.7	17.5	9.6	13.6	14.4	0.7
10	Public Administration	11.9	13.3	19.7	27.7	16.7	9.7	0.3	11.9	6.7
11	Other Services	13.6	16.8	17.1	15.6	22.1	11.6	9.3	10.5	-2.1
	Tertiary	18.4	15.2	18.1	15.3	15.9	12.1	13.4	13.5	-1.9
12	Total GSVA at Basic Prices	11.7	12.4	10.6	13.7	13.2	13.3	13.3	14.3	1.7
13	Taxes on Products	13.3	10.1	18.8	18.7	19.3	19.4	11.3	9.2	-2.0
14	Subsidies on Products	14.9	2.3	-16.1	9.6	5.7	15.0	-8.7	32.5	0.0
15	GSDP	11.7	12.4	12.0	14.2	13.9	13.9	13.4	13.5	1.3

Annexure 3

Sectoral contribution of gross state value added at current prices (%)

Sl. No.	Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (TRE)	2018-19 (SRE)	2019-20 (FRE)	2020-21 (AE)
1	Agriculture, Livestock, Forestry and Fishing	16.3	18.0	18.2	16.3	14.3	14.8	14.9	14.6	17.0	20.6
1.1	Crops	9.6	10.8	11.2	8.9	6.9	7.3	7.0	6.3	8.4	9.7
1.2	Livestock	5.6	6.1	5.9	6.3	6.4	6.6	6.9	7.3	7.6	9.9
1.3	Forestry and Logging	0.6	0.6	0.5	0.5	0.5	0.6	0.5	0.5	0.4	0.4
1.4	Fishing and Aquaculture	0.4	0.5	0.6	0.6	0.5	0.4	0.5	0.5	0.5	0.5
2	Mining and Quarrying	3.3	3.4	2.9	3.2	3.2	3.3	3.4	4.3	4.0	3.7
	Primary	19.5	21.3	21.1	19.5	17.5	18.1	18.3	18.9	21.0	24.3
3	Manufacturing	18.5	14.8	13.6	11.7	13.4	12.3	12.1	11.6	10.2	9.3
4	Electricity, Gas, Water supply and Other Utility Services	2.3	1.6	2.1	1.6	1.6	1.2	1.5	1.6	1.8	1.7
5	Construction	6.8	6.3	5.8	6.0	5.4	4.8	5.1	4.9	4.5	4.3
	Secondary	27.6	22.6	21.4	19.2	20.3	18.3	18.8	18.1	16.4	15.3
6	Trade, Repair, Hotels and Restaurants	11.2	11.9	12.2	13.8	14.1	14.4	15.3	16.1	16.4	14.9
6.1	Trade and Repair Services	9.1	9.7	10.6	12.2	12.5	12.9	13.9	14.7	15.1	13.7
6.2	Hotels and Restaurants	2.1	2.2	1.6	1.6	1.6	1.5	1.4	1.4	1.3	1.1
7	Transport, Storage, Communication & Services related to Broadcasting	7.5	8.0	7.7	7.7	7.5	7.1	6.7	6.6	6.4	6.0
7.1	Railways	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.4	0.3
7.2	Road Transport	4.3	4.6	4.4	4.4	4.3	4.1	4.0	4.2	4.1	3.7
7.3	Water Transport	-	-	-	-	-	-	-	-	-	-
7.4	Air Transport	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1
7.5	Services incidental to Transport	1.1	1.3	1.1	1.1	1.0	0.9	0.9	0.8	0.8	0.7
7.6	Storage	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.7	Communication and Services related to Broadcasting	1.5	1.5	1.6	1.6	1.6	1.5	1.2	1.1	1.0	1.1
8	Financial Services	6.3	6.3	6.3	6.5	6.2	6.1	6.0	6.1	5.8	5.9
9	Real Estate, Ownership of Dwelling and Professional Services	16.5	18.5	19.5	20.8	21.2	22.0	21.2	21.3	21.3	21.1
10	Public Administration	3.4	3.4	3.4	3.7	4.1	4.3	4.1	3.7	3.6	3.8
11	Other Services	7.9	8.1	8.4	8.9	9.1	9.8	9.6	9.3	9.0	8.6
	Tertiary	52.8	56.0	57.4	61.3	62.2	63.6	62.9	63.0	62.5	60.3
12	Total GSVA at Basic Prices	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Annexure 4

Gross state domestic product at constant (2011-12) prices (Rs. crore)

Sl. No.	Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (TRE)	2018-19 (SRE)	2019-20 (FRE)	2020-21 (AE)
1	Agriculture, Livestock, Forestry and Fishing	54,615	59,434	61,792	55,811	51,615	57,324	62,823	65,801	83,008	1,00,320
1.1	Crops	32,368	35,541	37,235	29,546	24,187	28,478	31,395	29,560	43,558	50,542
1.2	Livestock	18,848	20,351	20,827	22,519	23,938	25,520	27,473	32,150	35,255	45,361
1.3	Forestry and Logging	1,917	1,906	1,858	1,715	1,683	1,836	1,921	1,853	1,836	1,885
1.4	Fishing and Aquaculture	1,481	1,636	1,872	2,031	1,808	1,491	2,034	2,238	2,360	2,532
2	Mining and Quarrying	11,061	11,921	10,824	12,604	14,093	15,139	17,572	22,477	22,916	21,410
	Primary	65,676	71,355	72,616	68,415	65,708	72,463	80,395	88,278	1,05,925	1,21,730
3	Manufacturing	62,152	52,598	52,182	48,276	63,751	64,943	70,950	74,733	74,025	68,526
4	Electricity, Gas, Water supply and Other Utility Services	7,835	6,183	8,692	6,624	7,207	5,736	7,338	7,662	9,452	9,872
5	Construction	22,791	23,145	21,367	23,332	23,986	24,355	27,845	28,837	29,195	28,219
	Secondary	92,778	81,925	82,240	78,231	94,944	95,034	1,06,133	1,11,232	1,12,673	1,06,617
6	Trade, Repair, Hotels and Restaurants	37,478	40,266	43,576	52,230	58,543	64,832	75,150	85,866	95,036	82,878
6.1	Trade and Repair Services	30,487	32,967	37,881	46,315	52,044	58,137	68,238	78,479	87,431	76,557
6.2	Hotels and Restaurants	6,991	7,300	5,694	5,915	6,499	6,695	6,912	7,387	7,605	6,321
7	Transport, Storage, Communication & Services related to Broadcasting	25,318	27,889	29,005	31,075	33,892	35,323	36,422	39,028	41,897	40,212
7.1	Railways	1,614	1,680	1,806	1,750	1,710	1,704	1,918	1,961	2,307	2,070
7.2	Road Transport	14,613	15,982	16,871	17,678	19,116	20,051	21,717	24,439	26,370	25,263
7.3	Water Transport	-	-	-	-	-	-	-	-	-	-
7.4	Air Transport	233	404	306	548	984	1,075	1,103	844	881	824
7.5	Services incidental to Transport	3,718	4,532	3,964	4,338	4,412	4,730	4,842	4,843	5,253	4,666
7.6	Storage	175	139	146	145	143	149	125	189	182	177
7.7	Communication and Services related to Broadcasting	4,965	5,152	5,913	6,617	7,526	7,614	6,718	6,752	6,905	7,211
8	Financial Services	21,265	23,323	25,645	28,699	30,906	33,782	35,119	37,248	38,686	40,118
9	Real Estate, Ownership of Dwelling and Professional Services	55,514	62,606	69,881	78,506	87,438	97,946	1,03,455	1,12,513	1,22,411	1,20,903
10	Public Administration	11,313	11,523	12,120	13,860	17,024	18,928	19,973	20,149	21,424	21,435
11	Other Services	26,709	26,990	29,213	32,057	35,388	41,230	44,095	46,039	47,733	43,647
	Tertiary	1,77,597	1,92,596	2,09,440	2,36,427	2,63,191	2,92,042	3,14,214	3,40,843	3,67,186	3,49,192
12	Total GSVA at Basic Prices	3,36,050	3,45,876	3,64,296	3,83,073	4,23,842	4,59,539	5,00,742	5,40,353	5,85,783	5,77,539
13	Taxes on Products	32,811	34,209	35,183	41,113	49,417	57,371	66,711	72,384	77,343	77,266
14	Subsidies on Products	9,427	9,972	9,522	7,854	8,717	8,964	10,043	8,840	11,471	11,346
15	GSDP	3,59,434	3,70,113	3,89,957	4,16,332	4,64,542	5,07,946	5,57,410	6,03,897	6,51,655	6,43,459

Annexure 5

Sectoral growth rates of gross state domestic product at constant (2011-12) prices

Sl. No.	Sector	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (TRE)	2018-19 (SRE)	2019-20 (FRE)	2020-21 (AE)
1	Agriculture, Livestock, Forestry and Fishing	8.8	4.0	-9.7	-7.5	11.1	9.6	4.7	26.2	20.9
1.1	Crops	9.8	4.8	-20.6	-18.1	17.7	10.2	-5.8	47.4	16.0
1.2	Livestock	8.0	2.3	8.1	6.3	6.6	7.7	17.0	9.7	28.7
1.3	Forestry and Logging	-0.6	-2.5	-7.7	-1.9	9.1	4.6	-3.5	-0.9	2.7
1.4	Fishing and Aquaculture	10.4	14.4	8.5	-11.0	-17.6	36.5	10.0	5.4	7.3
2	Mining and Quarrying	7.8	-9.2	16.4	11.8	7.4	16.1	27.9	2.0	-6.6
	Primary	8.6	1.8	-5.8	-4.0	10.3	10.9	9.8	20.0	14.9
3	Manufacturing	-15.4	-0.8	-7.5	32.1	1.9	9.3	5.3	-0.9	-7.4
4	Electricity, Gas, Water supply and Other Utility Services	-21.1	40.6	-23.8	8.8	-20.4	27.9	4.4	23.4	4.4
5	Construction	1.6	-7.7	9.2	2.8	1.5	14.3	3.6	1.2	-3.3
	Secondary	-11.7	0.4	-4.9	21.4	0.1	11.7	4.8	1.3	-5.4
6	Trade, Repair, Hotels and Restaurants	7.4	8.2	19.9	12.1	10.7	15.9	14.3	10.7	-12.8
6.1	Trade and Repair Services	8.1	14.9	22.3	12.4	11.7	17.4	15.0	11.4	-12.4
6.2	Hotels and Restaurants	4.4	-22.0	3.9	9.9	3.0	3.2	6.9	3.0	-16.9
7	Transport, Storage, Communication & Services related to Broadcasting	10.2	4.0	7.1	9.1	4.2	3.1	7.2	7.4	-4.0
7.1	Railways	4.1	7.4	-3.1	-2.2	-0.4	12.5	2.3	17.7	-10.3
7.2	Road Transport	9.4	5.6	4.8	8.1	4.9	8.3	12.5	7.9	-4.2
7.3	Water Transport	-	-	-	-	-	-	-	-	-
7.4	Air Transport	73.6	-24.3	79.3	79.7	9.2	2.7	-23.5	4.3	-6.4
7.5	Services incidental to Transport	21.9	-12.5	9.4	1.7	7.2	2.4	0.0	8.5	-11.2
7.6	Storage	-20.8	4.9	-0.3	-1.2	3.8	-15.8	50.7	-3.9	-2.6
7.7	Communication and Services related to Broadcasting	3.7	14.8	11.9	13.7	1.2	-11.8	0.5	2.3	4.4
8	Financial Services	9.7	10.0	11.9	7.7	9.3	4.0	6.1	3.9	3.7
9	Real Estate, Ownership of Dwelling and Professional Services	12.8	11.6	12.3	11.4	12.0	5.6	8.8	8.8	-1.2
10	Public Administration	1.9	5.2	14.4	22.8	11.2	5.5	0.9	6.3	0.1
11	Other Services	1.0	8.2	9.7	10.4	16.5	6.9	4.4	3.7	-8.6
	Tertiary	8.4	8.7	12.9	11.3	11.0	7.6	8.5	7.7	-4.9
12	Total GSVA at Basic Prices	2.9	5.3	5.2	10.6	8.4	9.0	7.9	8.4	-1.41
13	Taxes on Products	4.3	2.8	16.9	20.2	16.1	16.3	8.5	6.9	-0.1
14	Subsidies on Products	5.8	-4.5	-17.5	11.0	2.8	12.0	-12.0	29.8	-1.1
15	Gross State Domestic Product	3.0	5.4	6.8	11.6	9.3	9.7	8.3	7.9	-1.3

Annexure 6

Sectoral contribution of gross state value added at constant (2011-12) prices (%)

Sl. No.	Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (TRE)	2018-19 (SRE)	2019-20 (FRE)	2020-21 (AE)
1	Agriculture, Livestock, Forestry and Fishing	16.3	17.2	17.0	14.6	12.2	12.5	12.5	12.2	14.2	17.4
1.1	Crops	9.6	10.3	10.2	7.7	5.7	6.2	6.3	5.5	7.4	8.8
1.2	Livestock	5.6	5.9	5.7	5.9	5.6	5.6	5.5	5.9	6.0	7.9
1.3	Forestry and Logging	0.6	0.6	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3
1.4	Fishing and Aquaculture	0.4	0.5	0.5	0.5	0.4	0.3	0.4	0.4	0.4	0.4
2	Mining and Quarrying	3.3	3.4	3.0	3.3	3.3	3.3	3.5	4.2	3.9	3.7
	Primary	19.5	20.6	19.9	17.9	15.5	15.8	16.1	16.3	18.1	21.1
3	Manufacturing	18.5	15.2	14.3	12.6	15.0	14.1	14.2	13.8	12.6	11.9
4	Electricity, Gas, Water supply and Other Utility Services	2.3	1.8	2.4	1.7	1.7	1.2	1.5	1.4	1.6	1.7
5	Construction	6.8	6.7	5.9	6.1	5.7	5.3	5.6	5.3	5.0	4.9
	Secondary	27.6	23.7	22.6	20.4	22.4	20.7	21.2	20.6	19.2	18.5
6	Trade, Repair, Hotels and Restaurants	11.2	11.6	12.0	13.6	13.8	14.1	15.0	15.9	16.2	14.4
6.1	Trade and Repair Services	9.1	9.5	10.4	12.1	12.3	12.7	13.6	14.5	14.9	13.3
6.2	Hotels and Restaurants	2.1	2.1	1.6	1.5	1.5	1.5	1.4	1.4	1.3	1.1
7	Transport, Storage, Communication & Services related to Broadcasting	7.5	8.1	8.0	8.1	8.0	7.7	7.3	7.2	7.2	7.0
7.1	Railways	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
7.2	Road Transport	4.3	4.6	4.6	4.6	4.5	4.4	4.3	4.5	4.5	4.4
7.3	Water Transport	-	-	-	-	-	-	-	-	-	-
7.4	Air Transport	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1
7.5	Services incidental to Transport	1.1	1.3	1.1	1.1	1.0	1.0	1.0	0.9	0.9	0.8
7.6	Storage	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.7	Communication and Services related to Broadcasting	1.5	1.5	1.6	1.7	1.8	1.7	1.3	1.2	1.2	1.2
8	Financial Services	6.3	6.7	7.0	7.5	7.3	7.4	7.0	6.9	6.6	6.9
9	Real Estate, Ownership of Dwelling and Professional Services	16.5	18.1	19.2	20.5	20.6	21.3	20.7	20.8	20.9	20.9
10	Public Administration	3.4	3.3	3.3	3.6	4.0	4.1	4.0	3.7	3.7	3.7
11	Other Services	7.9	7.8	8.0	8.4	8.3	9.0	8.8	8.5	8.1	7.6
	Tertiary	52.8	55.7	57.5	61.7	62.1	63.6	62.7	63.1	62.7	60.5
12	Total GSVA at Basic Prices	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Annexure 7

Net state domestic product and per capita income at current prices (Rs. crore)

Sl. No.	Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (TRE)	2018-19 (SRE)	2019-20 (FRE)	2020-21 (AE)
1	Agriculture, Livestock, Forestry and Fishing	51,358	63,599	72,267	71,272	70,539	83,285	95,098	1,04,583	1,38,141	1,70,840
1.1	Crops	29,554	37,322	43,357	37,528	32,283	38,477	41,946	41,381	63,569	74,566
1.2	Livestock	18,595	22,550	24,532	28,900	33,369	39,392	46,115	55,810	66,438	87,924
1.3	Forestry and Logging	1,896	2,079	2,144	2,441	2,474	3,328	3,650	3,584	3,711	3,809
1.4	Fishing and Aquaculture	1,312	1,647	2,234	2,404	2,412	2,089	3,388	3,808	4,422	4,540
2	Mining and Quarrying	9,734	11,146	10,331	12,499	14,320	16,531	19,885	28,303	29,965	29,965
	Primary	61,092	74,745	82,598	83,771	84,859	99,816	1,14,983	1,32,887	1,68,106	2,00,806
3	Manufacturing	52,925	46,102	47,857	45,156	61,183	63,802	71,274	77,280	77,283	71,872
4	Electricity, Gas, Water supply and Other Utility Services	5,215	3,864	5,873	4,967	5,815	4,983	7,410	8,663	10,883	10,846
5	Construction	21,728	22,349	23,105	26,171	26,798	26,836	32,468	35,082	37,231	36,081
	Secondary	79,869	72,315	76,836	76,293	93,796	95,620	1,11,152	1,21,026	1,25,397	1,18,800
6	Trade, Repair, Hotels and Restaurants	35,916	42,603	49,461	62,117	72,247	83,849	1,00,247	1,19,768	1,39,751	1,28,666
6.1	Trade and Repair Services	29,216	34,881	43,061	55,213	64,413	75,377	91,136	1,09,580	1,28,696	1,18,956
6.2	Hotels and Restaurants	6,700	7,722	6,400	6,904	7,834	8,472	9,111	10,188	11,056	9,710
7	Transport, Storage, Communication & Services related to Broadcasting	20,860	24,928	26,470	29,273	32,533	34,477	35,701	39,231	43,537	41,427
7.1	Railways	1,356	1,480	1,598	1,654	1,638	1,783	2,073	2,103	2,645	2,374
7.2	Road Transport	12,051	14,353	15,610	16,910	18,694	19,828	21,690	25,223	28,013	25,813
7.3	Water Transport	-	-	-	-	-	-	-	-	-	-
7.4	Air Transport	192	361	169	416	928	1,068	1,117	820	882	851
7.5	Services incidental to Transport	3,066	4,053	3,882	4,352	4,419	4,849	5,029	5,238	5,856	5,364
7.6	Storage	150	133	145	149	160	170	145	236	229	235
7.7	Communication & Services related to Broadcasting	4,045	4,549	5,066	5,792	6,694	6,779	5,647	5,611	5,912	6,790
8	Financial Services	20,929	23,214	26,154	29,704	32,409	35,554	39,892	45,593	50,111	51,965
9	Real Estate, Ownership of Dwelling and Professional Services	49,920	62,077	72,922	83,407	97,185	1,14,209	1,22,977	1,39,553	1,59,626	1,60,768
10	Public Administration	8,748	9,872	11,175	13,616	17,357	20,735	23,060	23,609	26,429	28,206
11	Other Services	24,421	27,945	32,816	38,750	45,040	55,413	61,542	67,358	74,440	72,869
	Tertiary	1,60,795	1,90,639	2,18,997	2,56,866	2,96,772	3,44,236	3,83,419	4,35,111	4,93,896	4,83,902
12	Total GSVA at Basic Prices	3,01,755	3,37,699	3,78,431	4,16,930	4,75,428	5,39,673	6,09,554	6,89,024	7,87,399	8,03,507
13	Taxes on Products	32,811	37,164	40,929	48,642	57,754	68,906	82,256	91,539	99,943	97,944
14	Subsidies on Products	9,427	10,833	11,078	9,292	10,188	10,767	12,383	11,301	14,974	14,974
15	Net State Domestic Product	3,25,139	3,64,030	4,08,282	4,56,280	5,22,994	5,97,812	6,79,427	7,69,262	8,72,368	8,86,477
16	Population ('000)	35,682	36,040	36,401	36,766	37,134	37,505	37,881	38,260	38,642	39,027
17	Per Capita Income (Rs.)	91,121	1,01,007	1,12,162	1,24,104	1,40,840	1,59,395	1,79,358	2,01,062	2,25,756	2,27,145

Annexure 8

Net state domestic product and per capita income at constant (2011-12) prices (Rs. crore)

Sl. No.	Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (TRE)	2018-19 (SRE)	2019-20 (FRE)	2020-21 (AE)
1	Agriculture, Livestock, Forestry and Fishing	51,358	55,959	58,076	51,883	47,578	53,042	58,220	60,256	77,408	93,784
1.1	Crops	29,554	32,548	34,073	26,191	20,723	24,759	27,454	24,691	38,690	44,893
1.2	Livestock	18,595	20,066	20,521	22,190	23,592	25,148	27,077	31,706	34,768	44,734
1.3	Forestry and Logging	1,896	1,890	1,841	1,694	1,662	1,809	1,893	1,824	1,806	1,854
1.4	Fishing and Aquaculture	1,312	1,455	1,641	1,808	1,601	1,325	1,797	2,035	2,145	2,302
2	Mining and Quarrying	9,734	10,456	8,943	10,704	11,743	12,541	14,885	18,513	18,877	17,636
	Primary	61,092	66,415	67,019	62,586	59,321	65,582	73,105	78,769	96,285	1,11,420
3	Manufacturing	52,925	43,626	43,501	39,854	54,924	55,949	61,027	64,255	63,646	58,918
4	Electricity, Gas, Water supply and Other Utility Services	5,215	4,052	6,031	4,502	4,933	3,731	4,676	4,580	5,650	5,901
5	Construction	21,728	21,971	19,977	21,833	22,462	22,715	25,920	26,724	27,055	26,151
	Secondary	79,869	69,649	69,510	66,189	82,319	82,395	91,623	95,559	96,352	90,970
6	Trade, Repair, Hotels and Restaurants	35,916	38,432	41,924	50,341	56,317	62,313	72,080	82,418	91,229	79,564
6.1	Trade and Repair Services	29,216	31,465	36,516	44,769	50,250	56,071	65,564	75,438	84,044	73,591
6.2	Hotels and Restaurants	6,700	6,967	5,408	5,572	6,067	6,241	6,515	6,980	7,185	5,972
7	Transport, Storage, Communication & Services related to Broadcasting	20,860	23,142	23,023	25,095	27,468	27,874	27,970	29,224	31,408	30,041
7.1	Railways	1,356	1,421	1,503	1,445	1,387	1,333	1,524	1,524	1,793	1,609
7.2	Road Transport	12,051	13,299	13,520	14,298	15,441	15,733	16,658	18,357	19,807	18,975
7.3	Water Transport	-	-	-	-	-	-	-	-	-	-
7.4	Air Transport	192	336	142	354	801	893	915	638	666	623
7.5	Services incidental to Transport	3,066	3,771	3,403	3,821	3,859	4,095	4,158	4,163	4,515	4,011
7.6	Storage	150	119	122	120	123	124	102	161	147	143
7.7	Communication and Services related to Broadcasting	4,045	4,196	4,332	5,058	5,856	5,696	4,613	4,381	4,480	4,679
8	Financial Services	20,929	22,917	25,224	28,204	30,286	33,080	34,359	36,400	37,805	39,204
9	Real Estate, Ownership of Dwelling and Professional Services	49,920	55,873	61,291	66,962	74,858	83,156	85,972	93,391	1,01,611	1,00,359
10	Public Administration	8,748	8,844	9,175	10,648	12,874	14,532	15,571	16,296	17,327	17,336
11	Other Services	24,421	24,695	26,767	29,612	32,749	38,393	40,797	42,650	44,219	40,434
	Tertiary	1,60,795	1,73,904	1,87,403	2,10,862	2,34,552	2,59,347	2,76,749	3,00,378	3,23,599	3,06,937
12	Total GSVA at Basic Prices	3,01,755	3,09,968	3,23,932	3,39,638	3,76,192	4,07,324	4,41,477	4,74,706	5,16,236	5,09,327
13	Taxes on Products	32,811	34,209	35,183	41,113	49,417	57,371	66,711	72,384	77,343	77,266
14	Subsidies on Products	9,427	9,972	9,522	7,854	8,717	8,964	10,043	8,840	11,471	11,346
15	Net State Domestic Product	3,25,139	3,34,205	3,49,593	3,72,897	4,16,892	4,55,731	4,98,145	5,38,250	5,82,108	5,75,247
16	Population ('000)	35,682	36,040	36,401	36,766	37,134	37,505	37,881	38,260	38,642	39,027
17	Per Capita Income (Rs.)	91,121	92,732	96,039	1,01,424	1,12,267	1,21,512	1,31,503	1,40,682	1,50,641	1,47,397

Annexure 9

Gross district domestic product of Telangana from 2017-18 to 2019-20 (Rs. crore)

Sl. No	District	Current Prices			Constant (2011-12 Prices)		
		2017-18 (TRE)	2018-19 (SRE)	2019-20 (FRE)	2017-18 (TRE)	2018-19 (SRE)	2019-20 (FRE)
1	2	3	4	5	6	7	8
01	Adilabad	11,889	13,098	15,013	8,941	9,336	10,421
02	Kumuram Bheem	7,683	8,807	8,977	5,441	5,996	5,915
03	Mancherial	12,093	12,687	16,476	8,760	8,887	10,044
04	Nirmal	11,243	12,519	15,015	8,143	8,672	10,019
05	Nizamabad	22,383	24,726	30,235	16,331	17,284	20,022
06	Jagtial	11,048	12,838	17,445	7,721	8,646	11,245
07	Peddapalli	14,496	16,762	19,415	11,110	12,080	12,441
08	Jayashankar	8,211	11,641	11,907	5,649	7,300	9,974
09	Bhadradri Kothagudem	18,169	21,006	25,886	13,608	15,074	16,879
10	Mahabubabad	10,991	12,022	12,597	7,588	7,941	8,085
11	Warangal Rural	9,878	11,167	13,782	7,181	7,826	9,089
12	Warangal Urban	14,389	15,628	18,212	10,683	11,067	12,228
13	Karimnagar	17,390	19,808	21,508	13,038	13,979	14,246
14	Rajanna Siricilla	7,476	8,030	10,007	5,314	5,456	6,508
15	Kamareddy	12,039	13,699	17,296	8,557	9,227	11,055
16	Sangareddy	29,216	31,161	36,915	22,321	22,813	25,759
17	Medak	15,405	16,831	20,706	11,693	12,349	14,104
18	Siddipet	17,015	20,322	20,878	11,944	13,359	13,490
19	Jangaon	7,576	8,067	10,882	5,412	5,443	6,854
20	Yadadri Bhuvanagiri	14,538	15,808	18,978	10,645	11,094	12,621
21	Medchal-Malkajgiri	56,117	65,571	72,354	44,376	49,651	52,658
22	Hyderabad	1,41,462	1,63,507	1,71,435	1,06,947	1,18,534	1,17,417
23	Rangareddy	1,48,556	1,68,598	1,82,551	1,11,741	1,21,341	1,25,934
24	Vikarabad	14,217	15,298	14,765	9,638	9,912	9,442
25	Mahabubnagar	17,865	21,617	22,963	13,652	15,667	15,931
26	Jogulamba Gadwal	8,362	9,351	10,033	5,695	6,083	6,282
27	Wanaparthy	7,157	7,987	10,023	5,022	5,411	6,344
28	Nagarkurnool	10,345	11,911	16,145	7,378	7,935	10,244
29	Nalgonda	25,381	28,248	36,532	18,598	19,738	23,700
30	Suryapet	15,941	17,593	22,942	11,502	12,133	14,781
31	Khammam	21,356	23,564	28,827	15,680	16,528	18,614
32	Mulugu	4,272	4,777	5,716	2,894	3,112	3,577
33	Narayanpet	5,892	5,945	8,938	4,205	4,023	5,731
	State	7,50,050	8,50,596	9,65,355	5,57,410	6,03,897	6,51,655

Annexure 10

Irrigation: completed and partially completed projects

A. Completed Projects

SI. No.	Project Name	Irrigation Potential (in Acres)				
		Contemplated		Created		
		New	Stabilized	New	Stabilized	
1	2	3	4	5	6	7
Major Projects:						
1	I	Alisagar LIS	0	53,792	0	53,792
2	II	Arugula Rajaram - Guthpa LIS	0	38,792	0	38,792
3	III	M. Baga Reddy Singur Project Canals	40,000	0	40,000	0
4	IV	Bhaktha Ramadasu LIS	0	58,958	0	58,958
5	V	Koilsagar LIS	38,250	12,000	38,250	12,000
Medium Projects:						
6	I	Mathadivagu Project	8,500	0	8,500	0
7	II	Choutpalli Hanmanth Reddy LIS	8,297	0	8,297	0
8	III	Ralivagu	2,480	0	2,480	0
9	IV	Kinnerasani	10,000	0	10,000	0
10	V	Gaddena - Suddavagu Project	14,000	0	14,000	0
11	VI	Gollavagu	9,500	0	9500	0
Modernisation:						
12	I	Modernization of NSP/ 57 LI Schemes from NSP	0	96,447	0	96,447
Total of Completed Projects			1,31,027	2,59,989	13,1027	2,59,989
Total of Completed Projects			1,31,027	2,59,989	1,31,027	2,59,989

B. Partially Completed Projects

1	2	3	4	5	6	7
Major Projects:						
1	I	AMRP (SLBC)	4,11,572	0	2,85,286	0
2	II	SRSP-II	3,97,949	0	3,64,953	0
3	III	JCR - DLIS	5,57,654	0	2,34,071	0
4	IV	Mahatma Gandhi -Kalwakurthy LIS	4,24,816	0	3,07,000	0
5	V	Rajiv - Bhima LI Scheme including SBRR	2,03,000	0	2,00,000	0
6	VI	Jawahar Nettampadu LI Scheme	2,00,000	0	1,42,000	0
7	VII	Sripadasagar Yellampally	1,78,808	37,000	45,000	37000
8	VIII	Indiramma Flood Flow Canal	2,52,882	0	20,000	0
9	IX	Kaleshwaram Project	18,25,700	18,82,000	0	13,20,000
Medium Projects:						
10	I	Sri Komaram Bheem Project	45,500	0	22,500	0
11	II	Neelwai	13,000	0	8000	0
12	III	Palemvagu	10,132	0	7000	0
Total of Partially Completed Projects			45,21,013	19,19,000	16,35,810	13,57,000

Annexure 11

Mission Kakatiya

	Phase-I		Phase-II		Phase-III		Phase-IV		Total
	No.of Tanks	Share in Total	No.of Tanks	Share in Total	No.of Tanks	Share in Total	No.of Tanks	Share in Total	
Total no. of tanks programmed	8,003	20%	8,946	20%	6,047	20%	4,629	20%	27,625
Total no. of tanks taken up for comprehensive restoration	7,954	19.87%	8,863	19.81%	5,958	19.70%	4,214	18.20%	26,989
Ayacut in Lakh Acres	6.92	-	6.83	-	3.81	-	3.22	-	20.78

Annexure 12

Demographic Details of Telangana

a. Population of Telangana State from 1961 to 2011

Year	1961	1971	1981	1991	2001	2011
Telangana	12,711,785	1,58,17,895	20,181,085	2,60,89,074	3,09,87,271	35,003,674
India	43,92,34,771	54,81,59,652	68,33,29,097	84,64,21,039	1,02,86,10,328	1,21,08,54,977

b. Percentage of Urban Population to total Population from 1961 to 2011

Year	1961	1971	1981	1991	2001	2011
Telangana	19.27	20.99	25.27	30.18	31.79	38.88
India	17.97	17.98	19.51	22.87	25.49	31.15

c. Percentage of Decadal Growth Rates of Population from 1951-61 to 2001-2011

Year	1951-61	1961-71	1971-81	1981-91	1991-01	2001-2011
Telangana	16.48	24.60	27.59	29.27	18.77	13.58
India	21.51	24.80	24.66	23.85	21.54	17.70

d. Density of Population from 1961 to 2011

Year	1961	1971	1981	1991	2001	2011
Telangana	111	138	176	227	270	312
India	144	177	216	273	325	382

e. Sex Ratio of Population from 1961 to 2011

Year	1961	1971	1981	1991	2001	2011
Telangana	975	969	971	967	971	988
India	941	930	934	927	933	943

f. Literacy Rate of Population from 1961 to 2011

Year	1961	1971	1981	1991	2001	2011
Telangana	17.34	20.70	26.49	41.30	58.00	66.54
India	28.30	34.45	43.57	52.21	64.84	72.98

Source: Registrar General and Census Commissioner, India.



Government of Telangana
Planning Department
www.telangana.gov.in