

SUSTAINABLE DEVELOPMENT GOALS IN TELANGANA

Achievements, Challenges and Way Forward



BASELINE REPORT



CENTRE FOR ECONOMIC AND SOCIAL STUDIES

(Planning Dept, Govt. of Telangana & ICSSR-Ministry of Education, Govt. of India)

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Message

My heartiest congratulations to the Telangana Government for commissioning this project on the assessment of the progress achieved towards the fulfillment of SDGs over the first quinquennial (2014-2020) of the new State's formation. The CESS team led by its Director Dr. Revathi and Dean, Dr. Alivelu has succeeded in presenting an excellent overall review of the various state programmes and schemes introduced spanning all the 16 SDG dimensions. The Report also identifies areas where additional focus is indicated in the coming years, while delineating the policy route to a successful attainment of the various SDGs by the target date of 2030. I am confident that the Report will make interesting and useful reading for policymakers and academics alike, and will prove to be an important ingredient in the Telangana policy matrix over the next few years.

Dilip Madhukar Nachane

Chairman CESS

Preface



In 2020, the Planning Department, Government of Telangana entrusted the Centre for Economic and Social Studies (CESS) with the task of preparing the Sustainable Development Goals (SDG) Report for the state. The Planning Department facilitated the process by providing relevant data from various departments. Drawing on this information, the faculty at CESS prepared chapters on all 16 SDGs, assessing the state's progress and achievements from the formation of Telangana in 2014 up to 2020. The report presents a detailed analysis of the programmes and schemes implemented by the state and evaluates their contribution towards the attainment of the SDGs. It also identifies key challenges and offers a roadmap for achieving the goals by 2030, accompanied by policy recommendations.

This Report serves as a valuable resource for policymakers, academics, and researchers, offering insights into the status of the SDGs, the impact of government interventions, and the challenges that remain. I express my gratitude to the Planning Department for entrusting CESS with this important task. I also thank the faculty for their dedicated efforts in preparing the report. Prof. Amar Yumnam, Visiting Professor at CESS, contributed an insightful introduction, while Mr. Laxmana Kuchi edited the chapters, and Mr. P. Raja Narender Reddy provided secretarial assistance in compiling the report. I sincerely thank each of them for their contributions to the successful completion of the Sustainable Development Goals Report for Telangana State.

E Revathi
Director CESS

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INTRODUCTION

I Context

The Sustainable Development Goals (SDGs), adopted in 2015, define the development discourse of the present decade. With their emphasis on ending poverty, safeguarding the environment, and ensuring inclusive prosperity by 2030, they mark a significant departure from earlier frameworks. The SDGs, with 17 goals and a wide set of targets and indicators, integrate the economic, social, and environmental dimensions of development in a manner that is both ambitious and universal.

The trajectory towards the SDGs was shaped by the Millennium Development Goals (MDGs), which guided global efforts between 2000 and 2015. The MDGs, framed as eight goals with a relatively narrow focus on poverty, health, education, and gender equality, succeeded in drawing global attention and resources to critical human development concerns. They brought measurable progress, such as reducing extreme poverty and improving access to schooling and health. At the same time, they revealed important gaps, particularly in addressing inequality, governance, and sustainability.

It is on the strength of this experience that the SDGs were framed. Unlike the MDGs, they are universal in application, relevant to both developed and developing contexts, and reflect a participatory process that engaged governments, civil society, and

other actors. Their guiding principle of “leaving no one behind” underscores an explicit concern with inclusion and equity, while the strong presence of environmental goals reflects the criticality of climate change and ecological balance. In this sense, the SDGs represent a broad-based and integrated approach to human progress.

Evidence from Telangana’s experience with the MDGs presents a mixed picture. The state performed well in reducing the poverty gap and ensuring near-universal completion of primary schooling, but lagged in reducing infant mortality. Unequal economic and social development in the erstwhile undivided Andhra Pradesh, alongside persistent inequalities and social exclusion, limited the full achievement of several MDG targets.

With the transition to the SDG framework, the responsibility for coordination and monitoring rests with NITI Aayog, while states are encouraged to develop their own indicator frameworks and align policies with the 2030 Agenda. Since its formation in 2014, Telangana has made conscious efforts to integrate the SDGs into its planning and policy processes. This introduction reviews the state’s progress, highlights the key challenges that persist, and outlines the institutional mechanisms guiding SDG implementation. A snapshot of the achievements and constraints in advancing the SDGs is presented below.

Telangana: SDG Progress and Challenges

SDG	Telangana Score / National Avg	Achievements	Challenges / Gaps
SDG 1 – No Poverty	68/60	Poverty reduction, targeted social welfare schemes	Regional disparities, vulnerable groups still left behind
SDG 2 – Zero Hunger	50/47	Food Processing Policy (2017), farmer income focus, irrigation schemes	Child stunting, wasting, rural malnutrition
SDG 3 – Good Health & Well-Being	67/61	Improved health outcomes, access to maternal/child health	Health infrastructure gaps in rural/tribal areas

SDG	Telangana Score / National Avg	Achievements	Challenges / Gaps
SDG 4 – Quality Education	64/58	Literacy improvements, T-SAT Vidya, skill centres	Quality of learning, dropout in higher classes
SDG 5 – Gender Equality	26/67	SHG mobilisation, women's collectives	Skewed sex ratio, low labour force participation
SDG 6 – Clean Water & Sanitation	85/83	Mission Bhagiratha, Swachh Telangana, universal access to toilets	Sustainability of water supply, waste management
SDG 7 – Affordable & Clean Energy	63/51	Solar power expansion, full household electrification	Grid integration, rising demand pressures
SDG 8 – Decent Work & Growth	82/64	Employment programmes, skill development, MSME support	Youth unemployment, informal sector vulnerability
SDG 9 – Industry, Innovation, Infrastructure	82/60	T-Hub, IT sector growth, infrastructure expansion	Manufacturing underdeveloped, R&D limited
SDG 10 – Reduced Inequalities	94/65	SC/ST sub-plans, targeted welfare	Persistent rural-urban & social inequalities
SDG 11 – Sustainable Cities	62/60	Urban housing, Metro rail	Air pollution, urban waste management
SDG 12 – Responsible Consumption	74/73	Awareness campaigns and initiatives on sustainable practices	Industrial waste, sustainable practices weak
SDG 13 – Climate Action	66/60	Haritha Haram afforestation	High climate risk, drought vulnerability
SDG 14 – Life Below Water	67/60	Inland fisheries development	Water pollution, declining fish diversity
SDG 15 – Life on Land	83/90	Haritha Haram, forest cover increase	Biodiversity threats, land degradation
SDG 16 – Peace, Justice, Institutions	77/67	Governance reforms, digital monitoring	Need for stronger institutional coordination

Source: Compiled from the chapters. Scores are for the year 2019-20.

II SDGs in Telangana

The chapters discuss in detail the achievements and challenges of the respective goal for a period of six years from 2014-15 to 2019-20. Every chapter initially provides a brief discussion about the performance of the concerned goal at the global, national and the state level. The index score of each of the goal is then presented for the year 2019-20. The targets and indicators of the respective goal are examined, followed by the policy interventions of both the central and state governments.; the efficacy of policy interventions in the performance of the

specific indicator is presented with supporting data. Various programmes undertaken by the state government for each indicator is explained in detail. The chapter ends with challenges faced in achieving the target by 2030 and the way forward is also presented.

SDG 1 - Ending Urban and Rural Poverty in Telangana

In 2020-21, Telangana State is in the league of frontrunners with an index score of 68 while that of India is 60. The government of Telangana

adopted a set of actions to be implemented by the government, regional and local communities with a reliable and articulate involvement at all levels for addressing poverty. In this regard, the government of Telangana focused on (i) raising the level of income of individuals and households living in poverty (ii) deployment of schemes in areas where there is low income and also less access to labour markets (iii) provision of health and educational services to the households living in poverty (iv) access to sufficient and nutritious food (v) facilitating the availability of decent housing (vi) social mobilisation to access credit, promote enterprises and formation of joint liable groups. Government of Telangana has proposed schemes like Aasara pensions, Streenidhi Bank, Arogyalaxmi, Supplementary Nutrition Programme and Housing for Poor and continued existing schemes with vigour Mahatma Gandhi National Rural Employment Grant Act (MGNREGA), Self-Help Group-Bank Linkages, to alleviate poverty. Creation of growing connectivity between rural and urban areas, between the primary, secondary and tertiary sectors, holds potential for the future achievements in ending urban and rural poverty in the state. Enabling access to quality primary education and affordable healthcare will go a long way in increasing the incomes of the households. With the rise in incomes, households are able to access health and education facilities and also become better consumers.

SDG 2 - End Hunger, Achieve Food Security, Improve Nutrition and Promote Sustainable Agriculture

The SDG Index Score on Goal 2 in 2019-20 for India stands at 47, and the Telangana State score is 50, just above the National Score. Telangana state is devoted to increasing the value-added agricultural production to fetch reasonable remunerative prices for the produce, also doubling the farmers' income. The state also has formalized Telangana food processing policy in 2017 enabling the government to interlink the food processing sector with agriculture, horticulture, aquaculture, dairy, meat and other food production sectors for

improving the income of farmers. Underweight, stunting, and wasting among children under 5 years of age; anaemia among pregnant women and children (6-59 months) is more prevalent in the rural and tribal areas. This needs a focused approach. In order to end hunger, achieve food security and promote sustainable agriculture, it is essential to effectively use every drop of water through micro-irrigation for improving crop productivity and production and achieving sustainable improvement in living standards of small and marginal farmers. In addition, there should be an emphasis on extension of appropriate technologies to farmers for high-tech horticulture, including micro-irrigation and precision farming.

SDG 3 - Good Health and Well-being for all

According to NITI Ayog's report, SDG India: Index and Dashboard 2019-20, the performance of the Telangana state has placed it in the league of front running states in India in respect of SDG-3 with a score of 67 while the national average is 61. The Maternal Mortality Rate (MMR) in the state is already below the SDG-3 target for 2030, child mortality rate is one of the lowest in India; nearing universalization of anti-natal care and post-natal care, institutional deliveries and child immunization. However, malnutrition among women and children is high, prevalence of high morbidity and mortality due to non-communicable disease, coupled with increasing cost of healthcare with growing private healthcare services. Way forward is to strengthen the public health system in the state, increase the public health expenditure, develop the functioning of the grass root medical workers, create more health and wellness centres. The state government should take measures for promotion and dissemination of preventive measures of healthcare through Information, Education and Communication (IEC) activities.

SDG 4 - Building a skilled, human resources rich, knowledge society

As per the report of SDG India: Index and Dashboard 2019-20, Telangana state is placed in the league of performers based on its score (64,

while the national average is 58) with respect to SDG-4. Telangana is nearing universalisation of elementary education, with more than 98 per cent of elementary school-age children and 94 percent of secondary school children attending schools. The gross enrolment ratio (GER) in higher education in the state is higher than All-India at 36 percent; higher education institutions available per lakh eligible population of 18-23 years is one of the highest in the country; there is high intensity of technical and professional education; gender parity in school education, and coverage of eligible population (attendance) is reasonably high along with quantitative expansion in institutions. The main challenges of this SDG 4 are to ensure quality of education at all levels, revitalise the public education system and make the private education affordable and accessible. There is a dire need to strengthen the Anganwadi centres in ICDS with specific focus on pre-primary component. In this context, it is imperative to provide required skills to the Anganwadi teachers. It is also essential to streamline the enrolment and attendance of children to enhance the net enrolment ratio.

SDG 5 – Achieve gender equality and empower all women and girls

According to 2019-20 NITI Aayog Report, Index Score for Goal 5 ranges between 26 and 52 for States. Himachal Pradesh, Kerala and Jammu belong to the category of Performers (with Index score between 50 and 65). All other States fell behind in the 'Aspirants' category (with Index score less than 50) and Telangana scored the least among the States and UTs. Sex ratio at birth is the highest in the state than All India. Rapid decline in infant mortality among girls and the equal distribution of live births by order of birth for both girls and boys in the state indicate a positive trend towards achieving a high child sex ratio by 2030. Around forty five percent (44.8) women in the age group 15-59 years participated in paid work in Telangana as against 20 percent at all-India during 2019. The incidence of crimes against women and

girls has been rising in the state and Hyderabad is the second city in the country with the highest number of domestic violence cases. The share of women workers in IT and ITeS sectors increased from 5 percent in 2011-12 to 25 percent during 2018-19. In order to achieve gender equality and empower all women and girls, a legal framework needs to be active and there is a need to spread community awareness about the consequences of practices of gender inequality. Reducing the crime against women and girls is the prime responsibility of the state, skill development and providing entrepreneurship opportunities to women also go a long way in achieving the gender equality.

SDG 6 - Clean, safe drinking water and health, hygiene and sanitation for all in Telangana

According to the 2019-20 SDG India Index report, Telangana performed relatively well in Goal 6 (Clean Water and Sanitation), ranking among the top states in India. In 2019-20 Telangana is in the league of front-runners with a score of 85. Nearly 84 percent of the population have safe and adequate drinking water in their premises. Around 97 percent of households in rural areas and 99.9 percent of households in urban areas have improved source of drinking water within 30 metres for a round-trip collection time. In the "Swachh Survekshan Grameen Awards – 2019", Telangana has been ranked the number 2 State in the Southern Zone. The challenges include construction of separate toilets for girls in the educational institutions, inculcating awareness on safe hygiene practices, maintenance of public taps and public sanitation facilities. It is essential that water sensitive design and planning need to be in place as urban areas get expanded. Initiatives should be towards plan and design of parks and open spaces for infiltration of rain water. Proper maintenance and upkeep of public sanitation facilities need to be accorded high priority keeping in view the floating and migrant population who access these public toilets.

SDG 7 - Ensure Access to Affordable, Reliable, And Sustainable Modern Energy for All

As per the SDG India Index Baseline Report 2018 prepared by NITI Aayog, Telangana comes under “Performer” (score 50-64) category with score of 63 in achieving Goal 7 on energy. The score of Telangana is above national average of 51. In 2019-20, the power situation of the state improved from power deficit state in 2014 to provider of 24x7 power to all sectors including free power to agriculture. The state has witnessed a significant capacity addition in areas of renewable energy during 2017-2020. As a result of implementation of Telangana State Solar Policy, 2015, the solar capacity increased from 74 MW at the time of formation to 3090 MW by the end of 2018. The challenges include focusing on efficiency and conservation of energy in the primary and the secondary sectors. The state government has to take measures to increase the share of renewable energy in total energy. The sub-transmission and distribution network of DISCOM needs to be upgraded to improve its operational performance.

SDG 8 - Promote inclusive and sustainable economic growth, full and productive employment for all

As per the SDG India Index Report 2019-20, Telangana comes under the category of front-runner and top performer with a score of 82 in achieving goal 8 and standing first amongst the Indian states. In 2019-20, the state registered a growth rate of 8.2 percent per annum, while all India GDP growth rate was 5.0 percent per annum. Services sector in the state grew from 53 percent in 2011-12 to 65 percent in 2019-20. The state also ranks third in per capita net state domestic product averaged for the period 2017-20. The main challenge of this goal is the creation of employment opportunities especially among the youth and women. Increasing the budgetary allocations for development programmes, devising policies to attract private investment, promotion of industries in two-tier towns and entrepreneurship on a wider

scale, especially among poorer sections are the other challenges in realising the goal. It is evident that growing services sector is not contributing to the employment growth both in urban and rural areas. Informal nature of the employment and shortage of skilled workers is a serious concern. The state government should initiate measures to increase the work force participation rates among women and the youth. More number of workers are to be brought under the gambit of social security. The gender inequality in wages needs to be reduced.

SDG 9 - Innovate, Incubate & Incorporate

According to SDG India Index Report, 2019-20, Telangana State is in the league of Performers with a score of 82 and it also retained its position in the top three in ease of doing business. Secondary sector grew at an average annual growth rate of 5.3 percent in 2019-20 while it was 2.5 percent at the all-India level. Telangana State Industrial Project Approval and Self-Certification System (TS-iPASS) Act, 2014 is a unique and innovative system which is being replicated in other states. TS-iPASS aims at speedy processing of applications for issuing various clearances that are essential for setting up of industries at a single point based on the provision of self-certificate by the entrepreneur. Growth of manufacturing sector has remained stagnant and the major challenge is to make the manufacturing sector more vibrant. For the manufacturing sector to grow at the desired pace, the state government has to create and provide the necessary infrastructure. Innovation is another area which requires major attention. An increase in the budget towards scientific innovation will go a long way in improving the industry.

SDG 10 - Progress with Distributive Justice and Reduced Inequalities

According to the composite SDG India index (2019-20), Telangana stands as the top-performer in the country with the highest score in the index. Telangana secured the highest score of 94 which makes it the “front-runner” with respect to the SDG 10. In rural areas the share of the poorest 20 percent increased from 8.9 percent to 10.7 percent while in

urban parts it increased marginally from 8.2 to 8.5. Out of the total 3,370 elected representatives of 139 Urban Local Bodies, 1,820 are women and 1,550 are men. Political empowerment of women has been extended to rural local governments. Under the land purchase scheme for SC women, around 16000 acres were purchased to distribute to nearly 6000 SC households. In 2019-20, around 5600 SC entrepreneurs and 2800 ST entrepreneurs were provided with financial incentive of Rs 215 crores and Rs 139 crores respectively. The major challenges of this goal is that consumption data shows that it is difficult for the SCs and STs to catch up with the process of economic growth. Likewise, the poverty among the marginalised sections and in rural areas is more pronounced. The way forward is the release of timely and adequate budget and also to create the necessary infrastructure. This can be made possible only with the availability of the data at the disaggregated level. The state government has initiated steps in this regard.

SDG 11 - Making cities & communities safer, more inclusive and resilient

The score of Telangana State is 62 and is categorised as the Performer according to the SDG India Index Report 2019-20. In the category of Performers, Telangana stands at the top for SDG 11. For the period 2001-11, the annual compound growth rate of urban population of Telangana state was 3.23 percent, which was higher than that of the national average of 2.76 percent during the same period. Telangana contributes to above 11 percent of the country's IT exports and Hyderabad ranks second in terms of total revenues from the IT sector. The 2010-11 census shows that 91.62 percent of urban households in Telangana have access to toilets. Open defecation in Urban Local Bodies is 8.38 percent. Hyderabad is a 100 percent urbanised district; the surrounding Ranga Reddy district is 70.22 percent urban. In 2019-20, nearly 16500 double bedroom units were constructed. The expansion of cities without matching infrastructure, other related services may become a hurdle in creating better cities. The air pollution created by the expansion

of cities would pose a serious health hazard to the citizens. Solid waste management is yet another challenge in terms of environmental damage that it creates if not managed in an efficient way. Another major challenge is development of smart cities and towns in the tier II and tier III districts.

SDG 12 - Making cities and communities safer, more inclusive and resilient

The overall Index Score for the country is 74, ranging between 47 and 99 for States and UTs. Telangana's score is 73, improved from the previous score of 58, which is very close to the national average of 74 (SDG India Index Report 2019-20). In 2019-20 the state's power generation doubled from 7778 MW in 2014 to 15864 MW. The State stands first in sheep population, 12th in goat population, third in poultry, 15th in bovine population and 14th in pig population and 8th in Livestock population in the country as per the Livestock Census, 2019. The state government should create avenues for capacity building of the frontline staff and other stakeholders to achieve the target of SDG 12. More investment should be diverted towards R&D initiatives to maintain and sustain eco-friendly technologies. For sustainable production and consumption, resource efficiency needs to be maintained.

SDG 13 – Climate Action, Combating Climate Change

According to the national SDG report (2019) Telangana state scored 66 out of 100 and comes under the league of Performers. The State Energy Efficiency Index Report, 2019 states that Telangana stands fourth with regard to the energy efficiency index and is categorised as the Contender. Telangana is one of the front runners to mitigate climate change in the country and line up with India's National Action Plan on Climate Change. To achieve the committed objectives of SDG 13 by 2030, capacity of installed green energy needs to be encouraged. In addition, the green energy policies should be implemented efficiently to mitigate Carbon emissions. The proper implementation of

afforestation programmes will solve many climate change problems in the long run. The interaction between various other SDGs play an essential role in realising SDG 13.

SDG 14 – Life Below Water

Since SDG 14 concerns the marine ecosystems, it applies to only nine coastal states. Therefore, indicators and their values under Goal 14 have not been used to estimate composite SDG India Index Score. Telangana is a landlocked state but has plenty of water resources suitable for inland fisheries and aquaculture. It has the third largest inland water resources in India with 77 reservoirs besides 4647 tanks under the fisheries department and 19465 tanks under the panchayats. Reservoirs and tanks under the Fisheries Department constitute more than 80 percent of the water bodies for inland fisheries. As a result, the inland fisheries which are invisible but integral to achieve Sustainable Development Goals is a significant focus area in Telangana. In order to achieve the target of this goal by 2030 it is essential to focus on creation of additional water bodies and rejuvenate existing water bodies.

SDG 15 – Life on Land

Telangana is in the category of front runner in India with respect to achieving the SDG goal 15 with a score of 83 in 2019-20. However, it is performing slightly lower, as compared to all India level whose score is 90. The per capita forest area in the state is 0.082 Ha as against all India average of 0.240 Ha. Starting from the year 2017 July, the geotagged “Drone Swarms” dropped one lakh “seed balls” per day making the state the fastest way of sowing seeds for forest regeneration. Amrabad Tiger Reserve spread over 2,800 sq.kms in the districts of Mahbubnagar and Nalgonda, is the largest tiger reserve in the country. Stability and balance need to be maintained while developing infrastructure through forests as these pose risk and danger to the wild life. Livelihood support schemes may cause damage to the forests and wild life which needs to be taken care of. Protection of wild life from natural calamities is another challenge of this goal.

SDG 16 - Peace, Justice, and Building Strong Institutions

The State of Telangana achieved a score of 77 for the SDG 16 according to the latest SDG-INDIA Index (2019-20) prepared by NITI Aayog. Telangana attained tenth rank in the index among the Indian states.

SHE Teams is an innovative initiative of Telangana police aimed at curbing eve-teasing, harassment and stalking thereby ensuring safety and security of women in public places. Under a complementary initiative, Sakhi One Stop Centres have been set up to provide integrated services for women victims of violence. The data on number of victims trafficked (per one lakh population), shows that in 2019 a total of 334 persons were trafficked (only one of them being male). Of 334 persons, 21 percent are children (below 18 years) and the remaining 79 percent are adults (above 18 years). The data also shows that all the 334 victims have been rescued. The challenges in realising this goal include rapid population growth hindering the law enforcement machinery and judicial systems. In order to reduce corruption along with enhancement of transparency in governance, digital divide between urban and rural areas needs to be addressed. Further there is a need to strengthen the institutions like Lok Ayukta and the State Human Rights Mission for achieving the targets of SDG 16.

III Challenges and Way Forward

Achieving the SDGs involves inevitable trade-offs, where progress in one area can sometimes hinder advancement in another. The critical feature of the SDG framework is its interconnectedness—the goals are mutually reinforcing and create synergies, yet their practical implementation may generate conflicts and tensions. For instance, while SDG 2 (Zero Hunger) is a strong enabler of SDG 1 (No Poverty), increasing agricultural production and incomes requires complementary policies that protect poor and vulnerable rural communities from environmental shocks. At the same time, reliance on chemical inputs for higher yields can degrade soil, water quality, and ecosystems—

directly affecting health outcomes (SDG 3) and environmental sustainability (SDG 13, SDG 15). Similarly, achieving SDG 3 (Good Health) reinforces SDG 2, as a healthy population is critical for nutrition security and agricultural productivity. Education (SDG 4) also generates wide-ranging positive externalities, improving progress across almost all goals.

Trade-offs are most visible in natural resource use: water (SDGs 6 and 14), energy (SDG 7 vs. SDG 8), land (SDG 15), and biodiversity (SDGs 14 and 15). By contrast, tackling inequalities (SDG 10) has strong synergies with poverty reduction (SDG 1) and decent work and growth (SDG 8). Understanding and managing these synergies and trade-offs is central to effective SDG implementation at the state level.

The second major challenge lies in mobilizing adequate public financing for the achievement of the SDGs. Governments need to prioritize expenditure and investment in infrastructure, research, and development, while adopting a science, technology, and innovation (STI) strategy supported by balanced regulatory policies. Such an approach should focus on fostering synergies across the goals. Moreover, the successful realization of targets requires strong partnerships between governments, civil society, the private sector, and, most importantly, the people.

Challenges in achieving the SDGs in Telangana stem from several structural factors of its economy and society. Nearly half of the State's GSDP is concentrated in the three districts of Hyderabad, Rangareddy, and Medchal-Malkajgiri, resulting in high per capita income in these areas, while districts such as Mulug, Narayanpet, Jogulamba Gadwal,

and Kumuram Bheem Asifabad record the lowest per capita incomes, underscoring the problem of spatial inequality in development. Inter-sectoral disparities are also pronounced, with agriculture contributing the least to GSDP, while the services sector accounts for the largest share. Further, weak linkages between employment and income, coupled with significant skill gaps in the services sector, exacerbate the challenge. Ensuring social inclusion is therefore critical to realizing the SDG commitment of 'leaving no one behind.' Equally, addressing gender issues—particularly women's safety and enabling their stronger participation in the labour market—is essential for advancing SDG 5, an area where the State continues to perform poorly.

The growth performance of Telangana vis-à-vis other states has been commendable. Among the 21 major states, it ranked third in per capita Net State Domestic Product (PCNSDP) during 2017–20, recording an average growth rate of around 8 percent. In the post-pandemic period, growth has rebounded, and with annual growth projections of about 7 percent for the decade 2020–30 (base year 2019–20), the state economy is expected to remain on a robust growth trajectory. Yet, beneath this strong growth performance lie structural disparities—spatial, sectoral, and social—that continue to challenge balanced development. The key challenge for policymakers, however, lies in aligning this economic momentum with the Sustainable Development Goals (SDGs), ensuring balanced progress across the social, economic, and environmental dimensions. Advancing a socially and economically inclusive development framework will be critical to achieving the SDG targets by 2030.

The Telangana Blueprint for Sustainable Development Goals Report

The Evolution

Development is necessarily a positive phenomenon. It never happens in a vacuum; it is the result of the interplay and interactions of many agents, resources and forces within a limited social and spatial space.¹ While there is global commitment to cause the generalization of this experience coupling the individual efforts of every society, it has now been realized that development cannot take the climate and the environment for granted; the activities using natural resources for the generation of development do cause negative externalities.

The first United Nations Conference on Environment took place in Stockholm in 1972 marking the realization at the global level that concerns for the environment in the development process should be real. This concern became very emphatic two decades later in the capital of Brazil, Rio de Janeiro, where the UN Conference on Environment and Development (UNCED) took place during 3-14 June of 1992. In this Earth Summit there were two meetings – one was the official conference of 170 nations and the other was the conference of NGO Global forum with representatives of varied interests – youths, women, business, trade unions, civil society organizations, etc.

The most significant achievement of the 1992 Earth Summit was the adoption of Agenda 21 and evolution of 27 Principles for international cooperation and functioning.² The Conference notes that the “United Nations Framework

Convention on Climate Change and the Convention on Biological Diversity were opened for signature at the United Nations Conference on Environment and Development and were signed at Rio de Janeiro by 154 States and one regional economic integration organization and 156 States and one regional economic integration organization respectively;

2. It adopts the Rio Declaration on Environment and Development, Agenda 21 and the Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests, which are annexed to the present resolution;

3. It recommends to the General Assembly of the United Nations at its forty-seventh session that it endorse the texts referred to in paragraph 2 above, as adopted.”³

The Report of the Conference opens the first chapter thus⁴: “Humanity stands at a defining moment in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being. However, integration of environment and development concerns and greater attention to them will lead to, the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can achieve

1 There is a vast literature on Development starting from Adam Smith's 1776 classic, *An Inquiry Into The Nature and Causes of The Wealth of Nations* and it is still a flourishing area. A very significant recent historical study with even the Externalities accounted for is Acemoglu, Daron and Simon Johnson (2023), *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity*, Basic Books, London.

2 United Nations, (1993), Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, Volume I, Resolutions Adopted by the Conference, United Nations, New York.

3 Ibid., p. 2

4 Ibid., p.12

this on its own; but together we can – in a global partnership for sustainable development.”

It would be relevant to recall the 27 Principles⁵ here for better appreciation of the Report and the social context for realising the objectives:

Principle 1: Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.,

Principle 2: States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 3: The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Principle 4: In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Principle 5: All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

Principle 6: The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

Principle 7: States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

Principle 8: To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Principle 9: States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and-by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

Principle 10: Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Principle 11: States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied

⁵ Ibid., pp. 3-8.

by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

Principle 12: States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

Principle 13: States shall develop national law, regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14: States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Principle 15: In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Principle 16: National authorities should endeavour to promote the internalization of environmental costs and the use of economic

instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Principle 17: Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

Principle 18: States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

Principle 19: States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.

Principle 20: Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 21: The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 22: Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Principle 23: The environment and natural resources of people under oppression, domination and occupation shall be protected.

Principle 24: Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.

Principle 25: Peace, development and environmental protection are interdependent and indivisible.

Principle 26: States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.

Principle 27: States and people shall cooperate in good faith and in a spirit of Partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.”

The Way and The Challenge

While talking of war and conflict, we usually mean the ones involving violence⁶. The rising consciousness and conscientiousness of the impacts on climate of the various production and business activities did affect the business domain of those who have been in activities now considered harmful to the environment. This led to various vested interest groups starting to emerge. While the scientific world was building arguments and evidences on the impact of human activities on the climate, a counter-argument questioning the validity of the human impact arguments started getting momentum⁷. Given “the fact that there was still some real division within the climate research community on a matter as seemingly

fundamental as whether we had yet firmly detected a human influence on climate meant there was a preexisting cleavage into which the forces of denial could attempt to drive a wedge and generate uncertainty and controversy about the science.”⁸ By the late 1995, the “scientific evidence for human-caused climate change had grown ever more compelling.....Industry-funded resistance to the science, however, had grown proportionately.”⁹ Fortunately, the deniers of climate change are increasingly losing their ground on both scientific and general population support grounds.

The new climate war is thus most likely to end in favour of protecting our environment and saving the climate for good. But there is a new challenge emerging. The world is now experiencing a rapid transformation in the digital front, including the rising dominance of Artificial Intelligence (AI); we do not yet know the full implications of these.

At the turn of this century, the experts could observe with confidence that “brand presence emerges as an important means of continuity and interfacing with other communication media. If not, new brands and landmarks, that surface almost daily on the Internet, can become extinct even before being recognized and accepted by the consumer. The time span for creating new brands and landmarks has been shortened substantially through the availability of computers and a wide variety of computer software. Many creators of these brands and landmarks, by being enamoured with technology, are ignoring the fact that technology changes so quickly that brands which have not been developed and maintained with thoughtfulness, foresight and in context with their target audience will disappear as quickly as they are

6 See, e.g., Anderton, Charles H. and John R. Carter, (2009), *Principles of Conflict Economics: A Primer for Social Scientists*, Cambridge University Press, Cambridge: “Conflict economics has two defining characteristics. First, it maintains that the concepts, principles, and methods of economics can be fruitfully applied to the study of conflict activities. Thus, diverse phenomena like war, arms races, alliances, and terrorism are analyzed and understood as outcomes of purposeful choices responsive to changes in underlying incentives.” P. 1 “we define conflict economics as

(1) the study of violent or potentially violent conflict using the concepts, principles, and methods of economics and (2) the development of economic models of appropriation and its interaction with production and exchange activities.” P. 2

7 For a recent contribution in this area, see Mann, Michael E., (2021), *The New Climate War: the fight to take back our planet*, SCRIBE, Melbourne – London.

8 Ibid., p. 24.

9 Ibid., p. 28.

born. Thus, the blessings of technology can, if used frivolously, become their creators' demise."¹⁰

The implications of the digital innovations are becoming increasingly unpredictable and the scope for applications increasingly unlimited. A recent McKinsey Global Institute study reports: "with gen AI, 27 percent of the hours worked in Europe and 30 percent of hours worked in the United States today could be automated by 2030, based on a midpoint adoption scenario (Exhibit 5).¹² By 2035, these figures could rise to 45 percent in Europe and 48 percent in the United States—reflecting a continuing increase of automation potential in the coming decade. (Our model suggests that many hours worked would still be automated even without gen AI but fewer than with it: 20 percent in Europe and 21 percent in the United States by 2030.)"¹¹ AI has been found to be different while it can at the same time take advantage of the prevailing technology: "data science focuses on extracting insights and knowledge from raw data, whereas artificial intelligence aims to simulate and embed human intelligence into machines. However, in many cases, AI systems will leverage insight derived from data science to enable machines to learn and make intelligent decisions. It is important, therefore, to acknowledge the overlap between data science and AI, while also understanding that AI and data science remain two different approaches to solving complex problems."¹²

CESS Perspective

It is in this global background that Telangana is already establishing the capability to emerge as the fastest growing State in India with Hyderabad as one of the most innovative Asian cities.¹³ The Centre for Economic and Social Studies (CESS)

is fully committed to make the realisation of this potential with whatever academic inputs the Centre can provide. The present study has been started with the following understanding of the issues pertaining to the Development and Environment interaction:

- A. As being emphasised in the UNCED Resolutions and the dominant approaches to social studies, CESS also feels very strongly the imperative to contextualise the sustainable development issues to the Telangana realities
- B. Since the externality issues are already known globally, Telangana need not go for relearning the lessons, but should rather concentrate on hastening the deepening and the widening of developmental process by avoiding the negative environmental externalities altogether; and
- C. Telangana is already on the path to evolve a unique mindset of growth¹⁴ and founded on the social capabilities created so far.

To make the realization of the objectives of Sustainable Development Goals with the qualitative properties defined above, the basis for adoption of these goals should be Social Choice¹⁵ with Justice built into it. The implementation of the SDG strategies should incorporate principles of Social Inclusion such that the implementation in due course becomes a Social Choice sooner. These perspectives are in-built in the studies incorporated in this volume and the interventions suggested.

Sustainable Development Goals

Looking at the contextual scenario, the faculty at CESS have taken up the Sixteen Goals for examination and assess them for implementation

10 Meyers, Herbert M. and Richard Gerstman, eds., (2001), *branding@thedigitalage*, Palgrave, New York, p. 3.

11 Hazan, Eric, Anu Madgavkar, Michael Chui, Sven Smit, Dana Maor, Gurmeet Singh Dandona, Roland Huyghues-Despointes, (May 2024), *A new future of work: The race to deploy AI and raise skills in Europe and beyond*, McKinsey Global Institute.

12 Theobald, Oliver, (2023), *AI For Absolute Beginners: A Clear Guide To Tomorrow*, Scatterplotpress.com

13 Planning Department, Telangana Socio-Economic Outlook 2023, Government of Telangana; - Telangana Socio-Economic Outlook 2024; World Trade Centre, (2024), *Telangana's Growth Story: The Road to \$1 Trillion Economy*.

in Telangana for a socially shared bright future. All the experts have done an extensive exposition of each objective in the social context of Telangana. It would be evident from going through the Chapters that all the experts have emphasized that the SDGs should not be seen just as Climate Objectives but as contextualized Social Objectives.

Goal 1: Is rich in understanding the issue of Poverty. The para on Challenges is a sharp appreciation of the ground issues. The chapter ends with a wonderful exposition of the way forward by examining the importance of skill development and sectoral development requirements.

Goal 2: The emphasis on elimination of hunger. The focus on defining Hunger and Agriculture Development is empirical-oriented and very robust one at that. Hunger component of the Goal is very well-defined. The emphasis on ending hunger while at the same time ensuring rising income of farmers is a very robust one.

Goal 3: Focuses on efforts for achieving Good Health and Well-Being for all. In this chapter, the efficacy of the various government schemes under implementation has been examined and the necessary modifications needed have also been identified. The wishes of the government for further policy enhancements have also been mentioned.

Goal 4: Relates to education scenario at the various stages of learning as prevailing in Telangana. The vision for the Education with Quality has been identified as “Transforming Telangana state into equitable and dynamic knowledge society with learned citizenry and skilled human resources”. The prevailing scenario has been examined for each stage of education provision, and the challenges for realising the vision have also been identified. The issue of skills for enhancing the employment scenario has also been examined.

Goal 5: Deals with gender issues and examines how gender equality can be established. Six Targets in this context have been identified for addressing in the State. They are: (i) Ending discrimination against women and girls; (ii) Ending violence and exploitation of women and girls; (iii) Elimination of forced marriages and genital mutilation; (iv) Valuing unpaid work of women and promotion in sharing domestic responsibilities by men; (v) Ensuring participation in leadership and decision-making by women; and (vi) Ensuring access to reproductive health. The interventions needed to move towards achieving these targets have also been identified.

Goal 6: Deals with an issue which does not generally attract public attention and the ones that people generally take for granted. This is about water management and sanitation. In this chapter, the areas needing policy attention have been identified for raising efficacy in water management, and improvement in provision and application of sanitation practices.

Goal 7: Relates to a very critical input to modern life and significant for innovations. The chapter provides a picture of energy availability at both global and national levels. With the understanding of the comparative picture, the chapter explains the progress the State has made in raising the share of renewable energy in the consumption scenario and the efforts in place to frame policy in this connection.

Goal 8: Focuses on employment. The employment scenario in the State has been found to be encountering problems needing special focus and specific interventions.

Goal 9: Deals with the Industry, Innovation, and Infrastructure issues of the Telangana State. The orientation of the State to Innovate, Incubate,

14 Cf. Murphy, Mary C., (2024), *Cultures of Growth: How the New Science of Mindset Can Transform Individuals, Teams and Organisations*, Simon & Schuster, London/New York/Sydney/Toronto/New Delhi.

15 Craven, John, (1992), *Social choice: a framework for collective decisions and individual judgements*, Cambridge University Press, Cambridge; Johnson, Paul E., (1998), *Social Choice: Theory and Research*, Sage, Thousand Oaks/New Delhi; Elster, Jon, Ed., (1986), *Rational Choice*, New York University Press, New York; Jenny Stewart, (2009), *Public Policy Values*, Palgrave Macmillan, New York.

and Incorporate is emphasised. The key industries today are in the fields of Pharmaceuticals, Textiles, Food Processing, Leather, and Electronics. The State has already undertaken steps to improve the foundation for expansion in the modern digital sector of information technology and also in the expansion in the traditional roads and railway networks.

Goal 10: Dwells on the mechanisms to reduce social inequalities. Emphasis is on the policy orientations for better performance on this front.

Goal 11: Focuses on Cities and Communities, deals with the issues caused by huge urbanisation process in the State. The challenge of waste management is particularly highlighted.

Goal 12: Deals with issues relating to establish responsible consumption and production. The contextual challenges have been identified and steps needed to address these issues are focused in this chapter.

Goal 13: A discussion on the climate actions needed for addressing the externalities coming out of economic activities. While the environmental impacts of human activities cannot be limited by boundaries, the areas where Telangana has been active for addressing the issues are detailed here.

Goal 14: Discusses the potential for the inland fisheries activities in the State to address the Oceans, Seas, and Marine Resources issues.

Goal 15: Relates to the examination of the significance of land in Telangana and the more than average national performance in this area. The areas for further enhancing the performance in this area have been identified in this chapter.

Goal 16: Deals with the significance of Peace, Justice, and Strong Institutions for satisfactory performance in the SDG front. The committed response of the State administration and thereby achieving attractive performance is explained in this chapter.

Conclusion: The present report is a strong attempt to appreciate the contextual realities of the interface of climate and development in relation to Telangana. The robust built-in endeavours in the activities being undertaken in Telangana do emerge from the examination of issues relating to a wide range of activities undertaken in the State under visible policy guidelines. The commitment to emerge as a model of development with sustainable perspectives is already seen. The incorporation of the policy suggestions mentioned in the present Report would certainly enhance the capability of the State to emerge as a viable model of development with sustainability.

Sustainable Development Goal - 1

Ending Urban and Rural Poverty



Vision

Along with growth, eradication of poverty is an important objective of the economic policy of the Telangana government as spelt out by its Vision. It focuses on reducing poverty along with social inclusion leading to the empowerment of the poor.; For this, it is essential that the government ensures the benefits of growth reach everyone in all sections of the society. For achieving this, Government of Telangana has proposed schemes like Aasara pensions, MGNREGA, Self-Help Group-Bank Linkages, Streenidhi Bank, Arogyalaxmi, Supplementary Nutrition Programme and Housing for Poor to alleviate poverty.

Achievements

- The incidence of poverty in Telangana State was 44.2 percent in 1993-94 but declined at the rate of 2 percentage points per annum to 8.8 percent by 2011-12. The decline was faster in the post-2004-05 period. The rate of decline in PHR in the state was twice that of the national average and was highest among Southern states.
- The incidence of rural poverty in the state declined from 48.8 percent in 1993-94 to 11.2 percent by 2011-12. The levels of urban poverty were lower in all the years than those of rural areas
- The relative deprivation and poverty among STs is higher with nearly 14 percent in rural areas and 16 percent in urban areas when compared to general population, 7 percent in rural and 4 percent in urban areas
- Across the State, 338202 pregnant and lactating (P&L) women, 914620 children aged between 7 months to 3 years and 480946 children aged between 3 to 6 years are registered in the

AWCs. 1306904 children per month under 5 years weighted for growth monitoring; 485547 children (3-6yrs) pre-school education for school readiness and 88653 NHED sessions are conducted to increase awareness among the P&L women.

- Under MNREGS, around 49.67 lakh job cards issued to 1.1 crore wage seekers of which 42.61 lakh job cards are active in the year 2017-18. Around 54.83 lakh job cards issued to 1.17 crore wage seekers of which 34 lakh job cards are active as on 7 January 2021. Around 55.69 lakh job cards issued to 1.23 crore wage seekers of which 33.15 lakh job cards are active in the year 2019-20
- In the financial year 2019-20, bank linkage for financial assistance of Rs. 4,658.70 crores were given to 1,37,214 women under SHG bank linkage scheme
- According to Census 2011, around 70 percent and 85 percent SC households; 47 percent and 81 percent of ST households received tap water in rural and urban areas respectively
- Around 83 percent and 98 percent of households have access to toilets connected to sewage system/septic tank/twin in rural and urban areas respectively

Challenges

The imbalance in poverty levels in rural and urban areas is a great concern. Providing access to basic resources and services and targeting those living in vulnerable situations are the other challenges of SDG 1. The state government should also make efforts to support the communities affected by conflict and climate related disasters. Focus should be on efforts to increase urban growth and incomes. This is needed because along with

urbanisation there will be an increase in urban poverty. Diversification of agriculture activities to increase farm income to reduce rural poverty is another challenge. Providing opportunities for future employment in manufacturing and services sectors occupies an important role, which necessitates skill development for productive jobs to encash the available demographic dividend.

1.1 The Context

Eradicating Extreme Poverty by 2030

According to World Bank, poverty is pronounced deprivation in well-being and comprises many dimensions. It includes low incomes and the inability to acquire the basic goods and services necessary for survival with dignity. It also encompasses low levels of health and education, poor access to clean water and sanitation, inadequate physical security, lack of voice and insufficient capacity and opportunity to better one's life.

There are two types of poverty – (i) absolute poverty defined as a condition where the household income is below a necessary level to maintain basic (food, shelter, clothing) standard of living. Absolute poverty cannot be compared over time and between countries. (ii) Relative poverty is a measure of income inequality and is measured as the percentage of the population living with income less than some fixed proportion of the median income. In order to identify who is poor and how they are poor the concept of multidimensional poverty is used. It identifies multiple deprivations poor health or malnutrition, lack of clean water or electricity, poor quality of work or schooling at the same time (OPHI, UK)

A new set of transformative and widespread Sustainable Development Goals (SDGs) were agreed upon at the United Nations General Assembly in September 2015 after taking stock of the performance of the Millennium Development Goals (MDGs) established in 2000. Eight MDGs represented a core people-oriented development agenda and the first MDG target of reducing by half the proportion of people living in extreme poverty

was achieved five years ahead of 2015 deadline. Accordingly, at the global level, number of people living in extreme poverty declined from 1.9 billion in 1990 to 836 million in 2015. About half of the population in the developing world lived on less than \$1.25 a day in 1990 while it decreased to 14 percent in 2015. Proportion of undernourished people living in the developing regions decreased by almost half by 2015.

In continuation of persistent efforts to eliminate poverty, SDG 1 aims to eradicate extreme poverty by 2030. Extreme poverty is defined as living on less than \$1.90 a day and is applied regardless of where a person lives. Number of people living in extreme poverty declined from 836 million in 2015 to 689 million in 2017 across the globe. China and India have been responsible for this decline in extreme poverty and India will continue to be a significant contributor in decreasing poverty at the global level. However, reduction in poverty has been uneven across regions. For instance, in 2018, eighty percent of people living on less than \$1.90 are in South Asia and Sub-Saharan Africa. Additionally, women are more likely to be poor than men because they have less paid work, education and own less property (unsdg.org).

Despite poverty levels declining, it is estimated that in 2030 around 6 percent of the world's population would be still living in poverty. In 2018, only 22 percent of the unemployed persons could access unemployment benefits, 28 percent of the severely disabled persons make use of disability benefits and just 41 percent of new mothers' access maternal benefits. Natural disasters are causing deaths and economic loss in many countries, often reversing poverty escapes by vulnerable groups (SDG India, Index and Dashboard, 2019-20).

Before the pandemic hit, the world was making significant progress on SDG1, on the basis of historic trends, extreme poverty was projected to decline to 6 percent by 2030, but COVID 19 led to a reversal in progress on SDG1. For instance, after several years of significant reduction in poverty, extreme poverty increased in 2020 in Sub-

Saharan Africa. The Covid-19 impact has pushed an estimated 120 million people into extreme poverty during 2020 mostly in low income and middle-income countries (SDR, 2021).

India adopted a multipronged strategy and targeted programmes to eliminate poverty. As a consequence, India's extreme poverty reduced by half between 1993 and 2011 and its rate in 2017 is estimated to be a little above the world average of 9.2 percent. Between 2005 and 2016, multi-dimensional poverty declined by half, making 271 million people come out of poverty. Social protection and safety nets in the form of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) generated around 1 billion person-days of employment, women accessed 55 percent and Scheduled Caste (SC) and Scheduled Tribe (ST) accessed 38 percent of work generated during 2019-20. 84.75 percent of people who demanded employment under MGNREGA were provided the employment under the scheme. 28.78 percent of households have at least one member covered under a health insurance or health scheme, 36.4 percent of eligible beneficiaries received maternity benefits, and there are ten homeless households for every 10000 households (SDG India, Index and Dashboard, 2019-20).

According to 2020-21 SDG Index India Report, 270 million people are lifted out of multi-dimensional poverty, 84.44 percent of beneficiaries are provided employment under MGNREGA in 2019-20, 4.2 percent households in rural and urban India live in kutchha houses, 91.38 percent eligible beneficiaries received social protection benefits under the Pradhan Mantri Matru Vandana Yojana. Under the New Pension Scheme, 14390543 persons received pension in 2020-21 while the figure was 9750406 in 2015-16. In case of senior citizens being provided with institutional assistance (with government funding) in the form of day care centres and senior citizen homes is 50860 in 202-21, 40,450 in 2017-18 and 23095 in 2015-16.

SDG1 – Targets

The SDG 1 It has five targets and two means of implementation, wherein targets postulate the goals and indicators characterize the metrics by which the world aims to track whether these targets are realized. The dimensions of targets and their goals can be realised once they are accomplished at local level only.

Table 1.1 Sustainable Development Goal 1 – Targets and Target Dimensions

Target	Target dimension
1.1	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
1.2	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
1.3	By 2030, implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable
1.4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services including microfinance
1.5	By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

Target	Target dimension
1.a	Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions
1.b	Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions

Source: UNDP

According to 2019-20 SDG India index report, index score for Goal 1 ranges between 28 and 72 for States and between 33 and 58 for Union Territories (UT). Telangana State is in the Performers league with a score of 52. SDG India Index Report 2020-21 shows that the index score ranges between 32 and 86 for states and between 61 and 81 for UTs. Further, according to this report, Telangana State is in the league of frontrunners with an index score of 68 while that of India is 60.

The Report on Millennium Development Goals in Telangana – Precursor of Sustainable Development Goals shows that in Telangana poverty levels declined from 44.2 percent 1993-94 to 8.8 percent in 2011-12. The poverty gap ratio (PGR) has been declining over the years gradually, implying a reduction in the depth of poverty. The poverty levels are lower in urban areas consistently for all social and occupational groups. The inter-social group and inter-occupational group differences in poverty levels have been narrowing down over the years. Addressing malnutrition among children remains a big challenge, which requires top priority to achieve sustainable development goals.

Vision Focusing on Poverty Reduction

Vision of Telangana State for reduction in poverty focuses on social inclusion and empowerment of the poor. Along with growth, eradication of poverty is an important objective of the economic policy of Telangana State. For poverty alleviation, the government of Telangana adopted a set of actions which are to be implemented by the government, its socio-economic partners, regional and local communities with a reliable and

articulate involvement at all levels. In this regard, the government of Telangana focused on (i) raising the level of income of individuals and households living in poverty (ii) deployment of schemes in areas where there is low income and also less access to labour markets (iii) provision of health and educational services to the households living in poverty (iv) access to sufficient and nutritious food (v) facilitating the availability of decent housing (vi) social mobilisation to access credit, promote enterprises and formation of joint liable groups (SERP, 2015).

Various programmes have been implemented by the government of Telangana drawn both from Centrally Sponsored Schemes (CSS) and State Sponsored Schemes (SSS) to address the above-mentioned priority areas. Government of Telangana has proposed schemes like Aasara pensions, Mahatma Gandhi National Rural Employment Grant Act (MGNREGA), Self-Help Group-Bank Linkages, Streenidhi Bank, Arogyalaxmi, Supplementary Nutrition Programme and Housing for Poor to alleviate poverty.

1.2 Telangana State Sustainable Development Goal 1 – Targets and Indicators

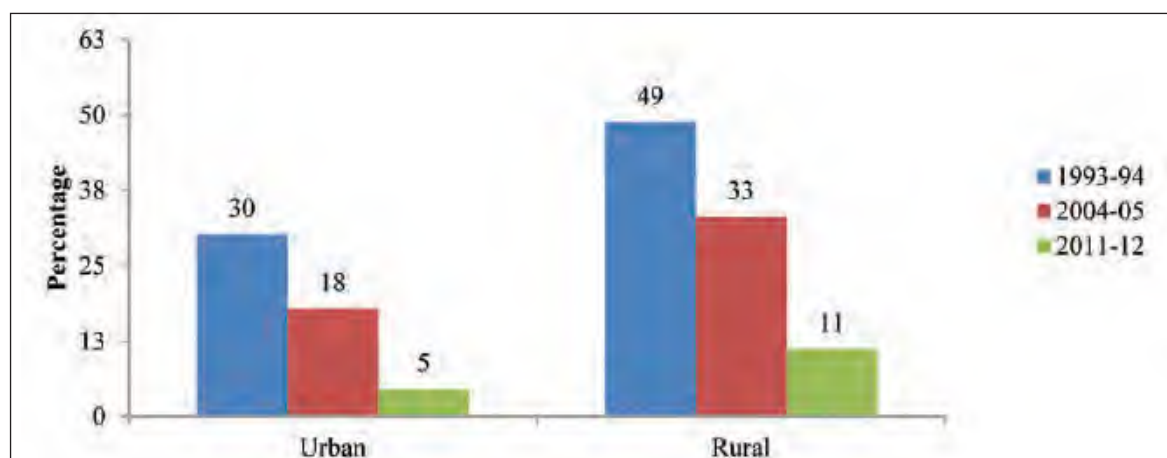
Target 1.1 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

High economic growth along with innovative Poverty Alleviation Programs (PAPs) have considerably reduced incidence of poverty levels in

the state. Telangana State experienced significant reduction in Poverty Head Count Ratio (PHR) during the last three decades¹⁶. This was one of the Millennium Development Goals that the state has achieved. The same prospects will continue with respect to SDGs also.

The incidence of poverty in Telangana State was 44.2 percent in 1993-94 but declined at the rate of 2 percentage points per annum to 8.8 percent by 2011-12. The decline was faster in the post-2004-05 period. The rate of decline in PHR in the state was twice that of the national average and was highest among Southern states.

Figure 1.1 Poverty Head Count Ratio in Rural and Urban Areas of Telangana



Source: MDG Report, Telangana

The incidence of rural poverty in the state declined from 48.8 percent in 1993-94 to 11.2 percent by 2011-12. The levels of urban poverty were lower in all the years than those of rural areas.

Poverty among Social Groups

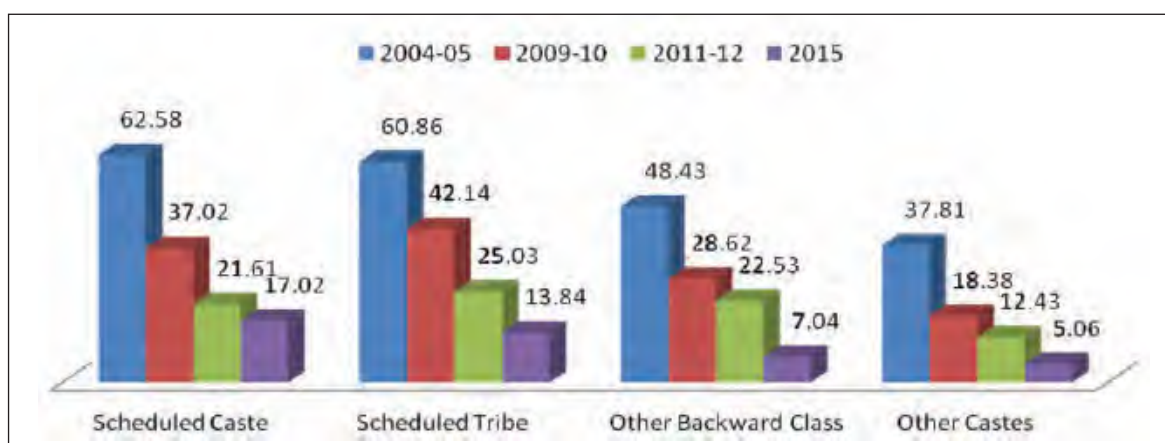
The poverty among the socially disadvantaged groups was very high in the early years of 90s but the level had fallen significantly during the reference period. The decline was very sharp during the two years ending with 2011-12, except among the Scheduled Castes (SC). The scenario was almost similar in both the rural and urban areas of the state. For instance, in the year 2011-

12, poverty among the SCs was higher than among Scheduled Tribes (ST) in rural Telangana but the reverse was the case in urban areas.

The poverty gap ratio (PGR) indicates the percentage difference between the average consumption of the poor and the state average consumption. In Telangana, the PGR has been declining rapidly in both rural and urban areas. The reach of the PAP in the state is evident from the fact that the PGR has declined from about 7 percent in 2004-05 to less than 2 percent in 2011-12. Similarly, the urban PGR declined from over 3 percent to less than 1 percent.

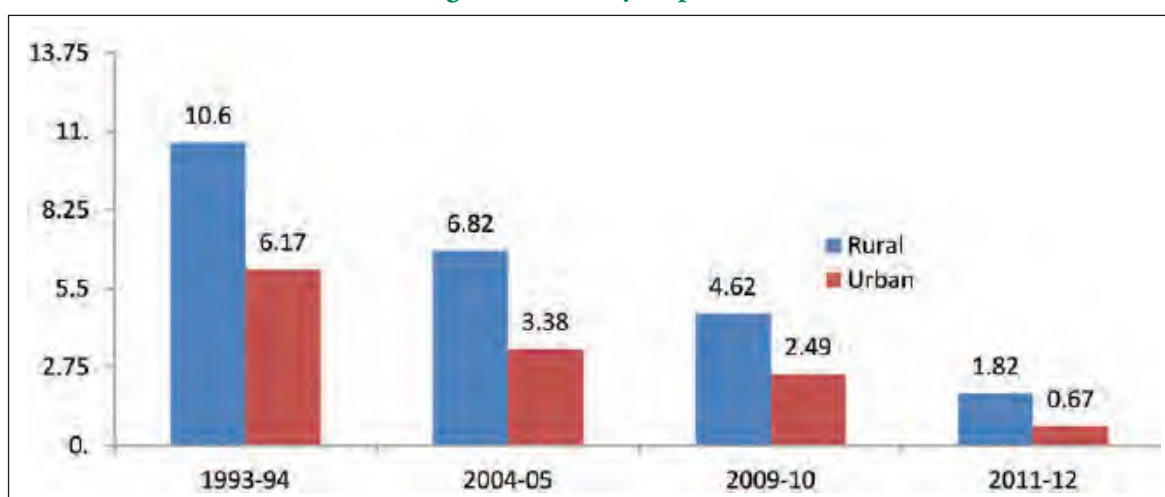
¹⁶ The latest official estimates of poverty line and poverty ratios in India were based on the methodology suggested by Expert Group headed by Suresh Tendulkar. For Telangana the estimates are based on the consumption data from the HCE surveys carried out in the states during the years 1993-94, 2004-05 and 2011-12. However as the Poverty Lines for the state are not separately available, the Poverty Lines of the pre-reorganised state of Andhra Pradesh were adopted. The discussion in this chapter is based on Report on Millennium Development Goals in TS.

Figure 1.2 Poverty among Social Groups in Telangana 2005-2015 (%)



Source: MDG Report, Telangana

Figure 1.3 Poverty Gap Ratio



Source: MDG Report, Telangana

According to Young Lives Report (2018), from the field data conducted in 2016 in Telangana State, it is observed that there is an increase in average wealth over time with the highest percentage change for ST households. The highest percentage change in access to services could be seen among SCs of rural households and in those households where mothers had no formal education. The largest change is seen in the average access to consumer durables, particularly among STs, SCs, rural households and where mothers had no formal education.

Programmes to Achieve Target 1.1

When Telangana State was formed in 2014, Government had initiated poverty alleviation

programmes to further reduce extreme poverty in all forms and dimensions and also in urban and rural areas. For poverty elimination in urban areas the Government implemented programmes like Support to Urban Street Vendors, Self-Employment Programme, Social Mobilisation and Institutional Development, Shelter for Urban Homeless. In the rural areas, programme like Employment Guarantee Marketing Mission and Shyam Prasad Mukherji Rurban Mission are in place to alleviate poverty.

Poverty Elimination in Urban Areas

Mission for Elimination of Poverty in Municipal Areas (MEPMA), is the State Nodal Agency for executing the PAPs in all urban areas of Telangana

State to support, reinforce and encourage self-sustainable institutions of the poor and address all the poverty concerns like access to credit, financial inclusion, health, disability and vulnerability along with centrally sponsored schemes like Deendayal Antyodaya Yojana - National Urban Livelihood Mission (DAY-NULM), self-employment programmes, employment through skills training and placements.

(i) Support to Urban Street Vendors (SUSV)

One of the major initiatives of MEPMA is SUSV and Telangana State Street Vending Rules are approved vide GOMs.No.89, dated 10 June, 2020. The main emphasis of this component is focus on identification, issuing of ID cards,

vending certificates, financial inclusion and social security to street vendors. In addition, Provisional Town Vending Committees (TVCs) formed in all 140 urban local bodies (ULBs)). SUSV has two components - Prime Minister Street Vendor Atma Nirbhar Nidhi (PMSVA Nidhi) and Street Vending Zones Infrastructure Improvement.

PMSVA Nidhi is a CSS fully funded by Ministry of Housing and Urban Affairs to (i) enable working capital loan up to 10,000 (ii) incentivize regular repayment and (iii) reward digital transactions to street vendors. In November 2021, under the PMSVANidhi scheme, Telangana became the first state in the country to achieve its target of distributing loans to 3.4 lakh street vendors.

Table 1.2 PMSVA Nidhi Initiatives in Telangana State

Initiative	Achievement
Number of street vendors identified as on 23.02.2020	83666
Number of street vendors identified during Pattana Pragathi from 24 February 2020 onwards	508071
Cumulative number of street vendors identified	591737
Number of applications submitted to bank	436268
Number of loans sanctioned	328220
Target for disbursement of loans	381000
Number of loans disbursed	228101

Source: MEPMA, Govt. of Telangana

Street Vending Zones Infrastructure Improvement is completed for 743 street vendors in 28 zones and for 675 street vendors in 27 zones work is under progress.

(ii) Self-Employment Programme (SEP)

Second component of MEPMA is Self-

Employment Programme (SEP), it focuses on provision of financial assistance to individuals or urban poor groups to start gainful self-employment ventures or micro-enterprises along with providing bank linkages to self-help groups (SHGs).

Table 1.3 Initiatives and Achievement of Self-Employment Programme in Telangana State

Initiatives	Achievements
Number of micro-enterprises established through urban SHGs	9627
Cost of establishing micro-enterprises through urban SHGs	Rs 8212.39 lakhs
Number of SHGs benefited since 2008	1.40 lakh
SHG bank linkage since 2008	Rs.10509.60 crores
Number of SHGs benefited under SHG bank linkage in 2020-21	14940
SHG bank linkage to 14940 SHGs in 2020-21	Rs. 726.58 crores
Number of beneficiaries under SEP in 2020-21	637
Financial assistance to 637 beneficiaries under SEP in 2020-21	Rs. 598.60 lakhs

Source: MEPMA, Govt. of Telangana

In addition, MEPMA also facilitated credit support of Rs18.36 crores to 3381 SHGs to cope up with the pandemic of COVID-19. Because of this initiative, during the pandemic crisis, 1337 SHGs produced 2340161 reusable cloth masks.

The programme *Vaddi Leni Runalu* or Interest-free loans (VLR) is a state sponsored scheme and is implemented by MEPMA for addressing poverty in all urban local bodies (ULBs) of Telangana. The main objective of VLR Scheme is to reduce the interest burden on the urban poor for the loans taken by SHGs and to encourage better repayment.

Till now Rs 334.24 Crores is released to 90325 SHGs under VLR.

(iii) Social Mobilisation and Institutional Development (SM&ID)

Social mobilisation and institution development organises all urban poor women into self-help groups in order to make them self-reliant. To make them work more efficiently at the disaggregated level, SHGs are further confederated into Area Level Federations (ALF) and Town Level Federations (TLFs).

Table 1.4 Social Mobilisation and Institutional Development

Initiatives	Achievements
Number of urban SHGs formed till now	1.76 lakh
Number of Slum Level Federations (SLFs) formed till now	5972
Number of Town Level Federations (TLFs) formed till now	132
Revolving fund as a grant to 525 eligible each SHG for 2020-21	Rs. 52.50 lakhs

Source: MEPMA, Govt. of Telangana

(iv) Employment through Skill Training and Placement (EST&P)

Employment through Skill Training and Placement aims to provide skills to the unskilled and semi-skilled urban youth in order to provide them with opportunities in the relevant sectors through placement organisations. EST&P also facilitates the urban youth to become self-entrepreneurs. Until 2020-21 a total of 35118 urban candidates are trained out of which 16924 have been employed.

(v) Housing Flagship Programme

The state government is striving to ensure that its citizens have access to affordable housing. Double bed room housing scheme is the flagship programme initiated by the state government in October, 2015. Under this scheme citizens are entitled to 100 percent subsidised housing, wherein there is no contribution from the beneficiaries, a marked shift from credit linked subsidy-based schemes (like the Pradhan Mantri Awas Yojana (PMAY) implemented by the national government). The scheme provides houses with 560 square feet plinth area that 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 square yards, while in urban areas; it is an apartment in multi-storied building.

Table 1.5 Housing Details in Telangana State (as on 30-11-2020)

Houses sanctioned	284257
Project cost	Rs 1870630 crores
Administrative sanction accorded	263978
Started	184171
Houses with 90% completion	103432
Completed in full shape	49322
Expenditure	Rs 9467.76 crores

Source: SEO Telangana, 2021

(vi) Shelter for Urban Homeless (SUH)

The main objective of SUH is to provide permanent shelters consisting of basic infrastructure facilities like water supply, sanitation, safety and security to the urban homeless. Until now out of 73 number of shelters sanctioned, 34 shelters are functional. During COVID 19 pandemic lockdown, shelter was provided to 26340 migrant labourers.

Third party survey conducted by Geographic Information System (GIS) on homeless identified 4503 homeless persons in 152 ULBs.

MEPMA is also providing 2 Bed-room, hall, kitchen (BHK) Housing for All in the urban areas. Mission for Urban areas has been launched for providing houses to all eligible urban poor. Under this programme, a total of 2,91,057 houses have been sanctioned between 2016 and 2021. Construction of 1,07,612 houses has been completed until November 2021, while the construction of remaining houses is at different stages of completion. The Greater Hyderabad Municipal Corporation (GHMC) is the implementing agency in its dominion and for the rest of the state Telangana State Housing Corporation (TSHC) is the implementing organisation.

Pattana Pragathi was launched by the Government in February 2020 to provide a robust base for better standards of living for the urban population, to make urban areas clean and green, and to provide better services to the urban public at large. It was executed in three phases- the first phase focussed on development of urban utility infrastructure, the second phase on sanitation, and the third on urban utility infrastructure and sanitation. Phase I and II of Pattana Pragathi were implemented in 2020-21, whereas the third phase was completed in 2021-22.

Poverty Elimination in Rural Areas

(i) Employment Generation and Marketing Mission (EGMM)

Employment Generation and Marketing Mission (EGMM) is drawn again from the Centrally Sponsored Scheme of Deendayal Antyodaya Yojana – National Rural Livelihood Mission (DAY-NRLM) under the mission called Ajeevika. It is an implementing agency of Deendayal Upadhyaya Grameen Kaushal Yojana (DDU-GKY) and provides skills to poor rural youth so as to get employed with regular monthly wages at or above the minimum wages. The EGMM focus is on providing one job for every poor family so as to

eliminate poverty in a sustainable manner. EGMM works in a public private partnership mode with government companies and the rural communities as its stakeholders. Bottom-up approach is adhered to move the rural poor from the unorganised to the organised sector. The Mission of EGMM is employability of below poverty line (BPL) rural youth through market driven training.

For the period 2016-2019, target fixed by the Ministry of Rural Development (MoRD) was 47311 rural poor youth with a cost of Rs. 302 crores in the ratio of 60:40 between central and state governments respectively. The Project Approval Committee (PAC) set a target of 45240 youth out of which 41409 youth were trained and 18486 youth are placed with a minimum wage of Rs. 9300. According to DDU-GKY social category wise minimum coverage to be achieved is 39 percent for SC, 17 percent for ST, 11 percent for Minorities, 33 percent for Women. In Telangana State out of 51 projects, 38 projects achieved minimum SC category, 33 achieved minimum ST category.

For the period 2019-2022, the physical target set by the Empowered Committee, MoRD was 90000 with a project cost of Rs. 817.84 crores. PAC, Telangana allocated 90000 target to 57 Project Implementing Agencies (PIAs), 34 PIAs initiated trainings to 9695 youth out of which 5954 youth completed training and 2500 youth obtained placements. After COVID lockdown, 27 centres with a total of 1325 youth are underwent training with a proper COVID 19 protocol.

Unnati Project is one of the schemes under DDU-GKY with a target of 4681 training and placement. The eligible workers who completed 100 days under Mahatma Gandhi National Rural Employment Scheme (MGNREGS) are trained under this scheme. During training period, the youth will receive a MGNREGS wage employment during the training period or maximum of 100 days whichever is less. For this project during 2018-2020, sixteen centres are active and trained 340 youth.

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Higher proportion of rural youth is trained under EGMM in 20 districts in 2019-20 as compared to 2016-17.

The CSS Shyam Prasad Mukherji Rurban Mission (SPMRM) or National Rurban Mission (NRUM) focuses on the development of clusters

(group of contiguous villages) with urban like basic infrastructure facilities and promotion of employment and livelihood opportunities. A total of 17 Rurban Clusters are being developed in the State covering 5 tribal and 12 non-tribal areas. Under Phase-I of the mission, a total of 4 clusters (3 Non-Tribal and 1 Tribal) have been sanctioned to the state during 2015-16.

Sl.No	Cluster	Category	Mandal	District
1	Allapur.S	Non-Tribal	Tandur	Vikarabad
2	Ryakal	Non-Tribal	Narayanakhed	Sangareddy
3	Jukkal	Non-Tribal	Jukkal	Kamareddy
4	Chirrakunta	Tribal	Asifabad	K.B.Asifabad

Under Phase-II of the mission 3 clusters (2 Non-Tribal and 1 Tribal) have been sanctioned to the state during 2016-17.

Sl.No	Cluster	Category	Mandal	District
1	Sultanabad	Non-Tribal	Sulthanabad	Peddapally
2	Vennacherla	Non-Tribal	Peddakothapally	Nagarkurnool
3	Nagaram	Tribal	Bhupalapally	Bhupalapally

Under Phase-III of the mission, 10 clusters (7 Non-Tribal and 3 Tribal) have been sanctioned to the state during 2017-18.

Table 1.8 Phase III of NRUM

Sl.No	Cluster	Category	Mandal	District
1	Choutuppal	Tribal	Choutuppal	Yadadri-Bhuvanagiri
2	Kondabheemanapally	Tribal	Devarakonda	Nalgonda
3	Kuntala	Tribal	Kuntala	Nirmal
4	Bijjirisharif	Non-Tribal	Jammikunta	Karimnagar
5	Papannapet	Non-Tribal	Papannapet	Medak
6	Shankarpally	Non-Tribal	Shankarpally	Ranga reddy
7	Jaligaon	Non-Tribal	Gajwel	Siddipet
8	Yedpalle	Non-Tribal	Yedpalle	Nizamabad
9	Nancherla	Non-Tribal	Gandeed	Mahboobnagar
10	Parvathagiri	Non-Tribal	Parvathagiri	Warangal (Rural)

Source: Planning Department, Govt. of Telangana

An amount of Rs. 1,574.21 crore has been utilised for the execution of various works in these Rurban clusters. In December 2021, Telangana ranked first in the implementation of SPMRM among the states. The Ryakal cluster in Sangareddy district and Jukkal cluster in Kamareddy districts of the state stood first and second respectively among the total 300 clusters in the country

Target 1.2 *By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.*

For this target, indicators have not been evolved at the national level, hence no attempt is made to study this target.

Target 1.3 *By 2030, implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable.*

The target indicators include (i) number of beneficiaries under Integrated Child Development Scheme (ICDS) (ii) social protection benefits under MGNREGS and Maternity Benefit Act (iii) number of SHGs provided with bank linkages (iv) senior citizens with access to institutional assistance.

(i) Number of Beneficiaries under Integrated Child Development Scheme

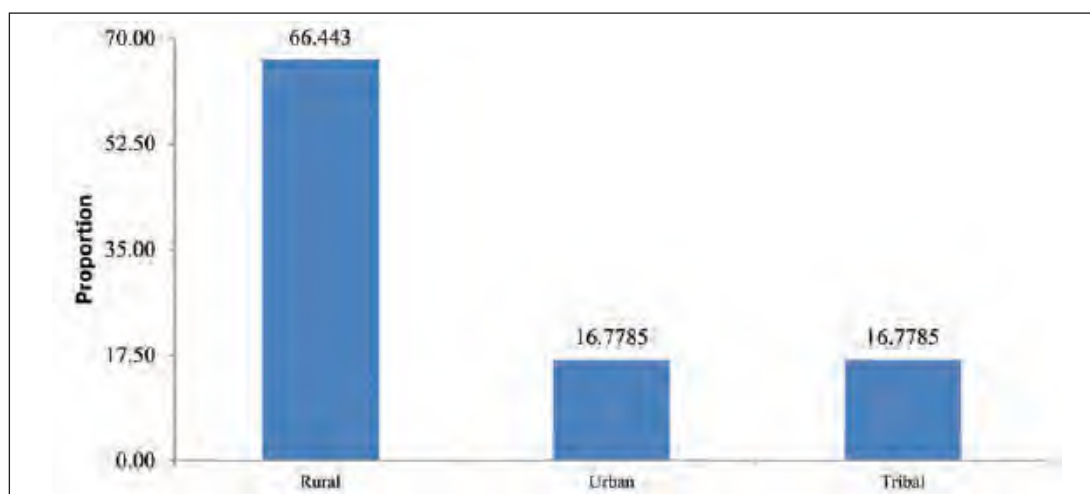
Women, Children and Adolescents are the most affected with the problem of under-nutrition under household poverty conditions. In this regard, the Government of India has initiated an Integrated Child Development Scheme (ICDS) in 1975 and universalized the same across all the villages and habitations in the 12th Five-Year-Plan (2012-17) period. Nutritional supplementation for children, women and adolescents has been the major component of ICDS packages or Anganwadi (AWCs) services.

Telangana is one of the few states where a separate Department is functioning for development and welfare of women and children. In many states, these come under the Social Welfare Department. The comprehensive mandate of the Department in Telangana State is to have all-inclusive development of Women and Children. For the all-inclusive development of the child, the Department has been implementing the world's leading and most distinctive and outreach programme of ICDS - providing a package of services comprising supplementary nutrition, immunization, health check-up and referral services, pre-school non-formal education. There are 35,700 Anganwadi Centers functioning in the State in 149 ICDS Projects (31,711 Main Centers and 3989 Mini Centers). Across the state, 338202 pregnant and

lactating (P&L) women, 914620 children aged between 7 months to 3 years and 480946 children aged between 3 to 6 years are registered in the AWCs. 1306904 children per month under 5

years are weighted for growth monitoring; 485547 children (3-6yrs) pre-school education for school readiness and 88653 NHED sessions are conducted to increase awareness among the P&L women.

Figure 1.5 Proportion of ICDS Projects in Rural, Urban and Tribal Areas of Telangana State



Source: Women and Child Welfare Department, Govt. of Telangana

Nearly 66 percent of ICDS projects are in rural areas, around 17 percent both in urban and tribal areas of Telangana State.

Telangana State introduced Arogya Laxmi programme involving spot feeding of 'One Full Meal (OFM)' for P&L women at the AWCs along with administration of Iron&Folic Acid (IFA) tablet. OFM aims to enhance the quality and acceptability of supplementary nutrition (SN) by P&L women, ensure that the OFM is consumed by the P&L women only, reduce the number of P&L women with anaemia, regular health check-ups for P&L women; reduce incidence of low birth malnutrition among the children.

OFM consists of rice, dal with leafy vegetables/sambar, vegetables for at least 25 days, boiled egg and 200 ml of milk for 30 days in a month.

Sixteen eggs are provided to children aged between 7 months to 3 years and 30 eggs for the children aged between 3-6 years.

Arogya Laxmi scheme benefited over 22 lakh beneficiaries in 2021-22. The pandemic year 2020-21 saw an enhanced coverage of 18.24% beneficiaries indicating effective outreach of the Government to the last mile mother and child in need.

(ii) Supplementary Nutrition Programme (SNP)

SNP tackles malnutrition and is the main component of ICDS and the services are provided to target groups of P&L women and children aged between 7 months to 6 years. The cost norms for Supplementary Nutrition Programme, under "Restructured" ICDS are revised by Government of India (GOI), as per details given below

Table 1.9 Cost Norms of Supplementary Nutrition Programme

Target Group	Revised Norms (per beneficiary per day)
Children (7-72 months)	Rs.6.00
Severely Underweight children (7-72 months)	Rs.9.00
Pregnant and Lactating women	Rs.7.00

Source: Women and Child Welfare Department, Govt. of Telangana

Table 1.10 Nutritive Norms for the Supplementary Nutrition

Category	Nutritive values	
	Calories (K Cal)	Protein (g)
Children (7-72 Months)	500	12-15
Severely underweight children (7-72 Months)	800	20-25
Pregnant & Lactating women	600	18-20

Source: Women and Child Welfare Department, Govt. of Telangana

Further, the state government is providing Ready to Eat Millet Based Food (as spot feeding at Anganwadi Centre) consisting of nutritive values and ingredient compositions along with micro-nutrients supplements to adolescent girls to fight anaemia. The 'Ready to cook Millet Based Food' (Kichdi / Pulihora / Sweet Pongal) is being supplied in collaboration with Touch Stone (Akshyapatra) Foundation and is extended to all (33) districts.

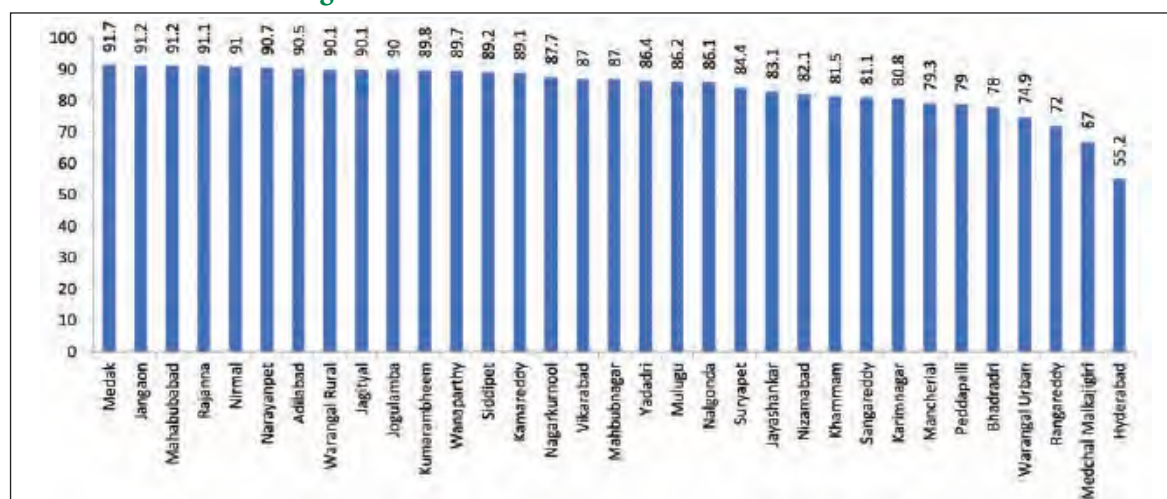
AWCs are also used for pre-school learning activities with necessary tools and infrastructure. Pre-School Kit at AWCs is developed and upgraded with the technical support of Early Childhood Care and Education (ECCE) experts. In this programme, child assessment cards for 3+ and 4+ year children are separately prepared and are used three times a year to evaluate the developmental domains of the children and are shared with the parents.

(iii) Food Security Act

While implementing the national level Food

Security Act, the state government is distributing six kilograms per person at Rs.1 per kg without any ceiling on the number of members in the family. This scheme is being implemented from 1 January, 2015 and around 88 lakh eligible families, nearly 28600000 beneficiaries have benefited out of this scheme till November, 2020. To have access to this scheme, the family income limit in rural areas is increased to Rs1.50 lakh and to Rs 2 lakh in urban areas and land ceiling increased to 3.5 acres and 7.5 acres of wet and dry land respectively. In addition, 120 MT of super fine rice is supplied to schools and hostels benefiting 56 lakh students per annum amounting to an additional outlay of Rs 120 crore.

Under the Public Distribution System (PDS), as of November, 2020, there are nearly 281 lakh beneficiaries. From a network of nearly 16990 fair price shops, the Civil Supplies Department distributes essential commodities to Antyodaya and Priority households eligible to receive food grains at subsidised prices.

Figure 1.6 PDS Beneficiaries as on November 2020

Source: Telangana SEO, 2021

(iv) Mahatma Gandhi National Rural Guarantee Scheme (MGNREGS)

Telangana is one of the leading states in the implementation of the centrally sponsored scheme, MGNREGS, a biggest poverty eradication and welfare programme in India. It is implemented in all the 32 districts of the state. The Scheme guarantees 100 days of unskilled wage employment to a rural household in a financial year. The wage employment is provided on demand for creation of productive assets and for strengthening Panchayat Raj Institutions (PRI).

The MGNREGS aims to stimulate sustainable rural economy through creation of productive assets. In the project design distribution of material and labour costs are fixed at 40:60. In case, employment is not provided to the job card holders the unemployment allowance is paid. The Act also has a Social Audit component ensuring the transparency in the quantum of works completed and in wage payments to labour, thus building self-assurance among the wage seekers to go for work. The involvement of PRIs is worth mentioning in the execution of the MGNREGS. The scheme is implemented in 12769 Gram Panchayats covering 575 mandals of 32 districts. Around 49.67 lakh job cards issued to 1.1 crore wage seekers of which 42.61 lakh job cards are active in the year 2017-18. Around 54.83 lakh job cards issued to 1.17 crore wage seekers of which 34 lakh job cards are active as on 7 January 2021. Around 55.69 lakh job cards issued to 1.23 crore wage seekers of which 33.15 lakh job cards are active in the year 2019-20.

The average number of days of employment provided to households has been lower than the mandated 100 days, and it has declined between 2018-19 and 2019-2020 at the state level and across many districts (Annexure 1.1). The share of women in total workers participated in MGNREGA has improved from 57 percent in 2015-16 to 68 percent in 2019-20 and the state ranked fourth next to Kerala, Tamil Nadu and Rajasthan. It is observed that the share of women in total workers is 37.6 percent while their share in MGNREGA

is 57.3 percent as per Periodic Labour Force Survey (PLFS) 2018-19. More women are being attracted to this programme because of high wage rates than that available outside and also proximity to worksites (Narayanan, 2020). The target fixed for the period 2030-31 is 68 percent. It is already achieved and the state has to maintain the current progress. Since the income of female workers adds to the household income and raises the standard of living of their households, the participation of women must be increased (Annexure 1.2; Annexure 1.3). Equality in the male and female wages can be achieved through MGNREGS.

In Telangana out of 50 lakh persons demanded work under MGNREGA, 81 percent were provided work during the period 2019-20. 27.5 percent of persons provided employment under this programme in Telangana during 2019-20. The target fixed for 2030-31 is 40 percent (Annexure 1.5).

Number of person days generated under NREGA increased in 2020-21 over 2019-20. In 2020-21, nearly 52 lakh wage seekers from 30 lakh households reported for work. In the same year, there is also an increase in the share of person days out of the total person days generated for SC and ST wage seekers. Further, 97 percent of the MGNREGS payments are made within fifteen days and the average wages of the beneficiaries increased gradually.

(v) UJJWALA Scheme

Skill Development Trainings such as Life skills, Home skills, Health, Nutrition, Importance of Education, Awareness about Rights, entitlements and access to public services are imparted to Adolescent Girls through NGOs. UJJWALA scheme is to prevent trafficking of women and children through local communities and providing counselling and the victims are provided shelter, food and clothing. SWADHAR Greh is set up in all the districts for women in distress for providing shelter, food, clothing etc.

(vi) Beti Bachao-Beti Padhao (BBBP)

Beti Bachao-Beti Padhao (BBBP) is implemented in the state with the main aim to address the declining Child Sex Ratio (CSR) between 0 to 6 years and empowerment of girls and women, girl child education, to prevent pre-birth sex selective elimination and to ensure survival and protection of girl child. The programme has two major components: (i) Public awareness through mass media campaigns and multi-sectoral action in the programme districts (ii) BBBP is being implemented in 8 districts – Hyderabad, Adilabad, Karimnagar, Mahbubnagar, Nalgonda, Nizamabad, Ranga Reddy, and Warangal. An amount of Rs.25 lakhs was sanctioned to all BBBP districts as per the District Action Plan.

During the third anniversary, 2018, 10 best performing districts were felicitated by the Govt. of India and Hyderabad is one among them. It received the National award India under awareness and sensitisation category for successfully completing three years of BBBP Scheme. Karimnagar district has received national award for best performance on BBBP under the category: “Effective Community Engagement” - facilitated on 24th January 2019.

(vii) The Society for Elimination of Rural Poverty and Self-Help Groups

It has been widely recognized that the Self-Help Groups (SHGs) has tremendous potential to help in alleviating poverty by ensuring mutual help and credit assistance to the poor families.

(viii) The Society for Elimination of Rural Poverty (SERP)

The Society for Elimination of Rural Poverty (SERP) facilitates social mobilization of poor rural women in the 32 rural districts. It works by building and nurturing Self Help Groups (SHGs) of women and their federations. The Society works on a comprehensive multidimensional poverty alleviation strategy by focusing on

- i) Building strong and sustainable institutions for the poor at habitation, village, Mandal and district level

- ii) SERP is facilitating bank linkage for SHG members by encouraging varied livelihoods to enhance the income of the poor under the SHG-Bank linkage programme
- iii) As part of Sustainable Livelihoods initiatives, Farmer Producer Groups (FPGs) and Livestock Farmer Producer Groups have been formed to facilitate them to create additional income through productivity augmentation and better market availability to help the farmers and to sell their products in a profitable manner
- iv) SERP is promoting Livestock based livelihoods under State and Central Projects to empower SHG women and enable them to create additional income through productivity enhancement and improved market accessibility
- v) To encourage additional livelihoods for poor SHG families, the Government introduced non-farm enterprises which will be established by SHG women by providing a marketing platform through Exhibitions/SARAS/DWCRA Bazars. The Government, as part of its welfare measures and social safety net strategy, has introduced Aasara pension scheme to ensure secured life with dignity for all the poor
- vi) For creation of Sustainable Livelihoods to rural poorest of the poor beneficiaries, Rural Self Employment Training Institutes (RSETIs) have been established by Lead Banks. At present, there are 10 RSETIs in Telangana, run by the State Bank of India and Andhra Bank. The basic objective of RSETIs is to provide short-term residential training in diverse spheres in 41 different courses taking into consideration local demand, followed by long-term handholding. RSETI will track youth and enable them to set up enterprises by giving essential support. The trained candidates will be tracked and hand held for three years through SERP by Mandal Samakhya and its staff

Table 1.11 Year Wise SHG Credit Linkage

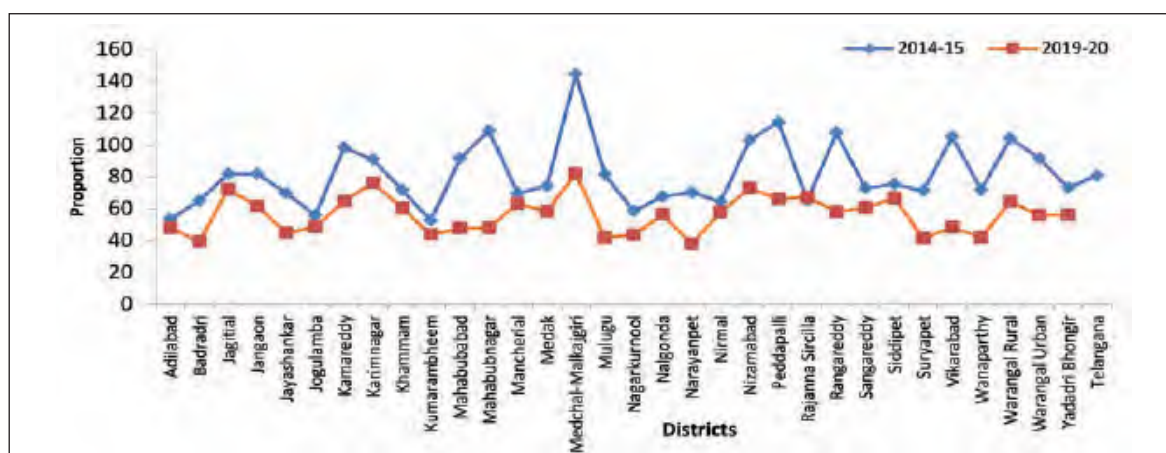
Sl. No	Year	Target		Achievement	
		SHGs	Amount (crores)	SHGs	Amount (crores)
1	2014-15	242715	3590.80	196447	3738.67
2	2015-16	274466	4122.73	250528	5266.81
3	2016-17	317906	5710.86	263578	5659.04
4	2017-18	325550	6960.24	180555	6395.73
5	2018-19	301080	6030.67	151926	6043.33
6	2019-20	336817	6445.62	192786	6547.21
7	2020-21 (as on 29.12.2020)	312863	10267.56	2285598	7057.49

Source: SERP, Govt. of Telangana

Number of new SHGs formed in the year 2021-22 (till November 2021) is 15,865. Telangana has pioneered the facilitation of bank linkages for all these SHGs. Since the formation of the State, the

amount disbursed to the SHGs every year almost tripled from Rs.3,738.67 crore in 2014-15 to Rs.10,448.03 crore by 2020-21.

Figure 1.7 Number of SHGs Formed as a Percentage of Total Targeted Number of SHGs (2014-15 and 2019-20)



Source: SERP, Govt. of Telangana

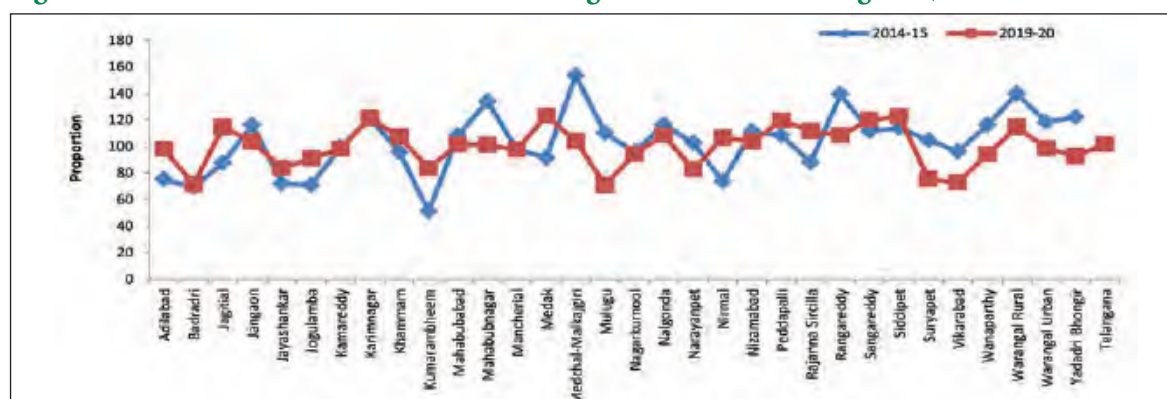
Number of SHGs formed as a percentage of total targeted SHGs is highest in Medchal-Malkajigiri both in 2014-15 and 2019-20. In 2019-20, Karimnagar stood next to Medchal-Malkajigiri while in 2014-15 it is Mahbubnagar which had higher number of SHGs next to Medchal-Malkajigiri. The Telangana government has been encouraging formation of SHGs among the poor families, encouraging thrift among them and providing them with timely and affordable credit facility under the “StreeNidhi” bank is

facilitating bank linkage for SHG members by promoting diversified livelihoods to augment the income of the poor under the SHG-Bank linkage programme. In the financial year 2019-20, bank linkage for financial assistance of Rs. 4,658.70 crores was given to 1,37,214 under SHG bank linkage scheme. During 2021-22 till December, Rs. 8,922 crore was disbursed as loans to 1.89 lakh SHGs in rural areas and till November, Rs. 1,107 crores was disbursed as loans to 17,287 SHGs in urban areas.

Under Stree Nidhi 203944 SHGs were covered in 2018-19 and under Bank Linkage 232121 SHGs were covered in 2019-20 (192727 (Rural), 39394 (Urban). 78 percent of the total eligible population received social protection under maternity benefits in 2019-20, while the target for this indicator is 90

percent in 2022 and aim to reach the target of 100 percent by 2025. 75 percent of the senior citizens had access to institution assistance in 2019-20, while the target set for 2022-23 is 80 percent, 85 percent for 2025-26 and 90 percent for 2030-31 (Annexure 1.6).

Figure 1.8 Amount Released to SHGs as Percentage of Total Amount Targeted (2014-15 to 2019-20)



Source: SERP, Govt. of Telangana

In 2019-20, amount released to SHGs as a percentage of total amount targeted is highest in Siddipet followed by Peddapalli.

Productivity enhancement and improved market accessibility is provided for livestock-based livelihoods to 48286 SHG women and extended financial assistance of Rs.5.13 crore to start the economic activity. SHG women were trained in First-aid Veterinary Services as Pashmithras to render door step services to the livestock. The SHG empowerment to ease the procurement of farmers produce within the village is noteworthy achievement and success of the institution building at the village level. SHGs themselves have been involved in non-farm enterprises with the marketing platform arranged by SERP.

MEPMA the state nodal agency for poverty alleviation in urban areas has till date established 13,425 micro enterprises through urban SHG women with a total cost of Rs.102.82 Crore. In 2021-22 an amount of Rs. 1,107.32 crore is provided to 17,287 SHGs under Self Help Group - Bank Linkage (SHG-BL) and Rs.113.92 Crore to 1,241 beneficiaries under Self Employment Program (SEP).

(ix) Maternal Benefit Act

According to G.O.Ms.No.10, Labour, Employment, Training & Factories (Lab.) Department, Dated: 18.5.2015, the Government have issued orders to enhance the amount from Rs.10,000/- (Rupees ten thousand only) to Rs.20000 towards "Maternity Benefit Scheme" for the registered women workers, wife & up to two daughters for two deliveries of beneficiaries of the Board. In 2017, the Commissioner of Labour & Member Convenor, Telangana Building & Other Construction Workers Welfare Board, Hyderabad, issued an order to enhance the existing amount under Maternity Benefit Scheme from Rs.20000 to Rs.30000. Of this an amount of Rs.10000 in lump sum will be paid to the women registered under Building & Other Construction Workers in the seventh month of her pregnancy to compensate the wage loss during seventh to ninth month of her pregnancy. The balance amount of Rs.20000 will be paid after delivery for the registered women workers, wife & two daughters for two deliveries each of beneficiaries of the Board.

(x) Institutional Access to Senior Citizens

Telangana State established appellate tribunals and maintenance tribunals to ensure maintenance

allowance from their children to senior citizens. National Policy on Older Persons is implemented in the State to help older persons live with dignity and peace and also to make sure that the older persons are not unprotected and marginalised.

The Telangana government launched two separate helpline numbers for the aged and disabled in April 2020. The toll-free number for the elderly is 14567, while that for disabled persons is 1800-572-8980. The numbers can be dialled by the senior citizens and disabled persons on the toll-free numbers, the voices will be recorded and intimated to the concerned district welfare officer for the required action.

Target 1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services including microfinance.

This target focuses on provision of basic services like water and sanitation, electricity and access to social protection programmes.

Access to Basic Services

According to Census 2011, around 70 percent and 85 percent SC households; 47 percent and 81 percent of ST households received tap water in rural and urban areas respectively.

Table 1.12 Households Received Tap Water in Telangana State (2011 Census) (%)

Social Group of Households	Total	Rural	Urban
SC households	72.0	66.9	85.2
ST Households	46.9	40.8	80.6
Non-SC/ST Households	77.8	70.2	87.8
All Households	73.7	65.5	87.1

Source: Census 2011

Table 1.13 Households Received Tap Water within the Premises in Telangana-2011 (%)

Location	SC HHs	ST HHs	Non- SC/ST HHs	All HHs
Total	39.9	22.0	54.1	48.5
Rural	31.4	15.4	38.6	34.0
Urban	62.0	59.3	74.7	72.5

Source: Census 2011

Higher percentage of SC households as compared to ST households in rural and urban areas received treated tap water within the premises.

Table 1.14 Households Received Tap Water in Telangana State (2011 Census) (%)

Social Group of Households	Total			Rural			Urban		
	Treated source	Non-treated	All	Treated source	Non-treated	All	Treated source	Non-treated	All
SC households	44.1	27.9	72.0	31.6	35.3	66.9	76.5	8.7	85.2
ST Households	23.8	23.1	46.9	15.3	25.5	40.8	71.3	9.3	80.6
Non SC/ST Households	54.1	23.6	77.8	33.8	36.4	70.2	80.9	6.8	87.8
All Households	49.4	24.3	73.7	30.9	34.7	65.5	80.0	7.2	87.1

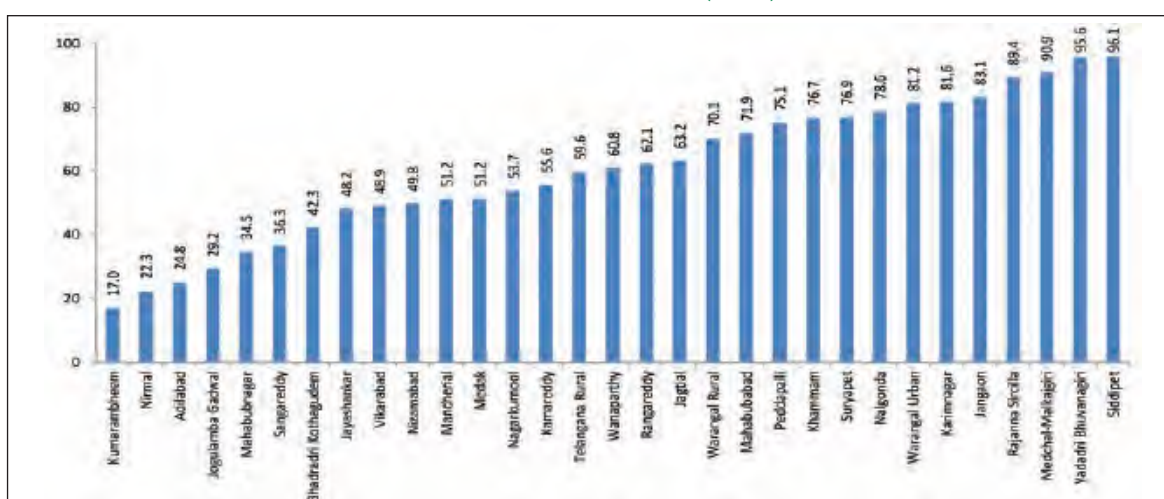
Source: Census 2011

According to the NSSO survey-76th Round, 98 percent of both rural households and urban households have access to safe drinking water¹⁷. The state ranked sixth among 21 major states and the proportion is higher than other South Indian states except Andhra Pradesh in case of urban areas.

57.3 percent of rural households have piped water supply (PWS) within premises and 26.2 percent have access to piped water located in public spaces. Among districts, Kumuram Bheem has the lowest percentage of households with PWS within premises (16.9 percent). Also, 14 districts fall below the Telangana Rural average. Kumuram Bheem, Nirmal, Adilabad, which have a high concentration of ST population and predominantly forest-based (adivasi) tribes rank last three in the PWS

coverage. In addition to the above, Mahbubnagar and Jogulamba Gadwal districts, which rank low in term of most development indicators, also have a lower coverage of piped water within premises. Bhadrachari Kothagudem (formerly in undivided Khammam district) and Jayashankar districts with high percentage of ST and forest-based tribes also have a low coverage of PWS than the Telangana Rural average. The coverage in these districts is lower due to settlements which are far flung and spread out. Sangareddy, Vikarabad, Medak districts also have lesser coverage with PWS within premises despite their proximity to the capital city of Hyderabad. Districts with PWS coverage above the state average are either proximate to urban areas or relatively developed districts (Mission Bhagiratha, Baseline Survey, 2017).

Figure 1.9 Percentage of Rural Households with Piped Water Supply within Premises across Districts (2017)



Source: Mission Bhagiratha Baseline Survey, 2017

Table 1.15 Households having Latrine Facility within the Premises in Telangana -2011 (%)

Social Group of the Households	Total	Rural	Urban
SC households	35.8	19.0	79.4
ST Households	19.9	9.6	77.9
Non-SC/ST Households	60.8	36.7	92.7
All Households	52.4	29.5	90.4

Source: Census 2011

17 According to the Monitoring organizations under the supervision of the Joint Monitoring Programme (JMP), "safe drinking water" is defined as water from an "improved water source," which includes household connections, public standpipes, boreholes, protected dug wells, protected springs and rainwater collections (March 21, 2018)

Similar to drinking water availability to the households, in case of sanitation too high

percentage of SC households have latrine facility within the premises as compared to ST households.

Table 1.16 Type of Latrine Facility within the Premises in Telangana -2011 (%)

Social Group of the Households	Total				Rural				Urban			
	Flush/Pour Flush	Pit	Oth-ers	All	Flush/Pour Flush	Pit	Oth-ers	All	Flush/Pour Flush	Pit	Oth-ers	All
SC households	82.5	14.7	2.9	100.0	68.2	30.1	1.7	100	91.3	5.1	3.6	100.0
ST Households	86.4	10.6	2.9	100.0	77.3	20.3	2.4	100	92.7	4.0	3.3	100.0
Non-SC/ST Households	84.1	12.9	3.1	100.0	68.1	30.5	1.4	100	92.4	3.6	3.9	100.0
All Households	84.0	13.0	3.0	100.0	68.6	30.0	1.5	100	92.3	3.8	3.9	100.0

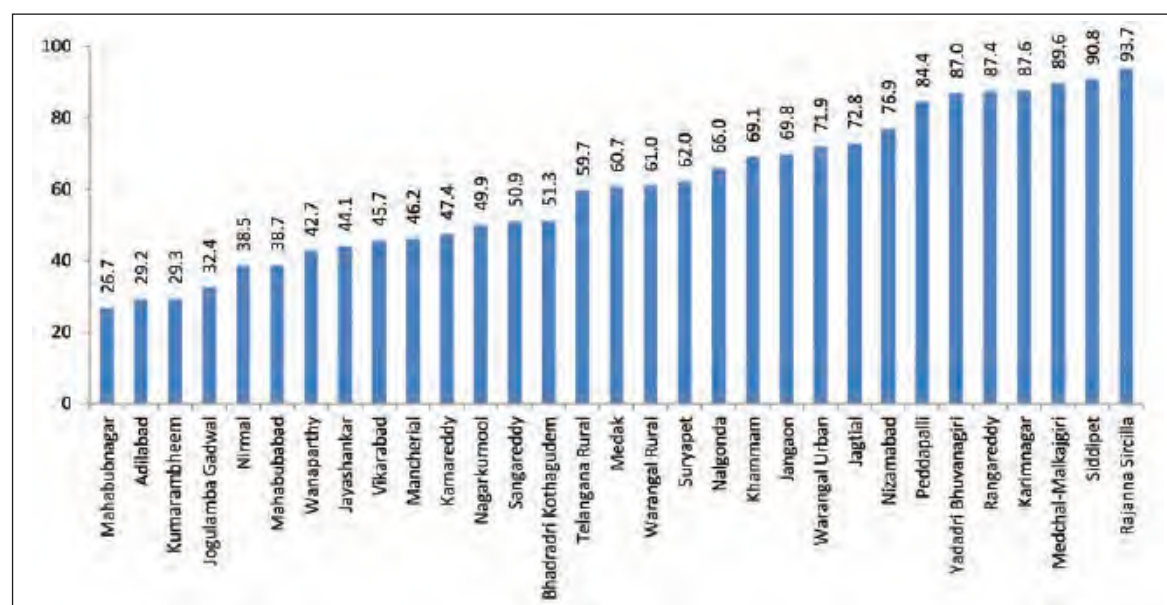
Source: Census 2011

The state has 83 percent of rural households having latrines connected to sewage tank while it is 98.2 percent in urban areas. It is not only higher than the national average but also higher than many other states and ranked 3 and 2 in rural and urban areas respectively among major 21 states of India.

Rajanna Sircilla district has been declared as an 'Open Defecation Free (ODF)' district on the 26th of January 2017. The percentage of households

with toilets within premises in this district is the highest in the entire state. Similarly, Siddipet also bagged the national award for the Swachh Bharat campaign. Jagtial, which also was declared as an ODF district, is not, however, on par with Rajanna Sircilla in terms of the number of households having toilet within premises. Still, 14 districts fall below the state average in having toilets within premises (Figure 1.10).

Figure 1.10 Percentage of Rural Households with Toilet Facility within Premises Across Districts (2017)



Source: Mission Bhagiratha Baseline Survey, 2017

Most of these districts are tribal concentrated or backward districts. Rajanna Sircilla district, which ranks highest in ODF, also has the highest percentage of households with shared toilets, followed by Jagtial which is also another ODF district. Exclusive access to toilet enables privacy for women. But having a shared toilet is a better situation than open defecation. Most districts falling low in having toilet within premises are the ones with exclusive access to toilet. In the rural areas, 60 percent of households have toilet facility within premises.

Around 83 percent and 98 percent of households have access to toilets connected to sewage system/septic tank/twin in rural and urban areas respectively (Annexure 1.6).

Electricity is another service to be provided to all including the poor and the vulnerable. While almost 9 out of 10 persons in the world have access to electricity, about 840 million still lack access, and 650 million would continue to do so in 2030 if the pace of progress remains unchanged. Over 85 per cent of these people live in rural areas. The National Electricity Plan 2018 also reinforces the government's commitment to transforming the Indian electricity sector with a target of 275 GW of renewable energy by 2027. 99.99% of households in India have access to electricity. 35.22 percent of total electricity generation is from renewable energy. By October 2019, 35.22 per cent of India's total electricity generation was from renewable energy. In terms of the share of renewable power as a proportion of the total electricity generated, Himachal Pradesh leads the country. 94 per cent of the total electricity generated in Himachal Pradesh is from renewable sources closely followed by Sikkim at 91 per cent NITI Aayog, 2020. Proportion of households with access to electricity in rural areas is 99.6 percent and 100 percent in urban areas in 2019-20 (Annexure 1.6).

At the time of its formation in 2014, Telangana was facing a power crisis with an installed capacity of 9,470 MW. With determined efforts by the Government, the installed capacity of power in

Telangana increased from 9,470 MW in 2014-15 to 17,218 MW in 2020-21 Telangana stands third among the non-special category states in the country and first among the south Indian states in terms of the growth rate in installed capacity between 2019-20 and 2020-21. During this period, the installed capacity of power in the state grew by 7.45 percent.

The spread of uses of mobile phones is one of the crucial aspects various government initiatives to ensure transparency and efficiency like Direct Benefit Transfers. In case of Telangana state, in 2019-20, number of mobile connections per 100 persons is 111.94 indicating widespread use of mobile telephones by the residents. Number of mobile phones as percentage of total population is 39.30 per cent. In case of Telephone connection (both wireline and wireless), there are 42.57 million subscribers in the State in 2019-20 indicating 113.53 telephone connections per 100 persons (Tele density).

In Telangana, 2440 Gram Panchayats were provided with Computers, Printers, Scanners, UPS & Broadband connectivity, in which 1333 Gram Panchayats were provided with BSNL Broadband. As in September 2020, 5765 Gram Panchayats have been provided with Computers, Printers, UPS and 1245 Gram Panchayats are having Internet connectivity. Three districts i.e. erstwhile Ranga Reddy, Khammam (342 GPS) & Nizamabad (393 GPS) Districts were identified for provision of Fibernet connectivity. They have laid Fibernet and equipment has been positioned. But, in 2 Districts, they have not given connectivity so far.

Social Protection Programmes

The government of Telangana has initiated several social protection schemes since the state formation in 2014. ASARA is a social assistance pension scheme of the state government implemented through SERP which is part of the State Department of Rural Development. The ASARA scheme is benefiting various age-groups and sections of society such as old age, disabled, widow, weavers, toddy toppers, HIV patients,

Filarial patients, beedi workers and single women. According to the live register of beneficiaries under ASARA programme, there were 38.4 lakh beneficiaries¹⁸ benefitting from monthly pension or financial assistance under the scheme in the month of September 2020. Every month pensions are credited regularly to the bank accounts of the pensioners. Rs.5000/- per acre per farmer each season for purchase of inputs like seeds, fertilizers, pesticides, labour and other investments in the field operations of farmer's choice for the crop season are also provided. During 2021-22, up to January 2022, 37.34 lakh pensioners were disbursed an amount of Rs. 7,078 crore.

Farmers Group Life Insurance Scheme (Rythu Bima) provides financial assistance and social security to the family members / dependents in case of loss of farmer's life due to any reason. The insured amount of Rs.5.00 lakhs is deposited into the designated nominee account within 10 days.

After scrutinising the existing pension schemes, the government enhanced the amount of different types of pensions and extended the pension schemes to new categories of eligible persons. The pension schemes have been named as Aasara pensions. These pensions are provided to protect the most vulnerable sections of the society and have a great support to the families in providing social security to meet minimum needs and to lead a dignified life. In particular the old and infirm, physically challenged persons, people with HIV-AIDS, widows, single women, incapacitated weavers and toddy tappers have benefitted from the Aasara Pensions. The Government is also providing financial assistance to Beedi workers. About 11 percent of the total State population have benefitted under the pension scheme. District wise live pensioners report is presented in Annexure 1.4.

Table 1.17 Category Wise details of Pensioners under the Aasara

Category / Year	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21 (Dec.20)
Old Age	1357602	1364399	1338698	1333679	1319300	1241804	1191350
Widow	1277403	1305253	1398639	1412267	1443648	1439403	1431827
Disabled	394953	449881	479848	484884	489648	494180	483759
Toddy Tapper	50970	55795	60399	61042	62942	62411	62051
Weaver	30607	33446	35800	36071	37342	37082	36647
Financial Assistance to Single Women	0	0	121875	125736	132298	134296	134247
Financial Assistance to Beedi Workers	256683	351954	407097	407119	408621	407801	421354
HIV Patients	9453	24402	45270	46728	28582	32871	32229
Filaria patients	0	0	0	0	14140	14903	16146
Total	3377671	3585130	3887626	3907526	3936521	3864751	3809610

18 See at: <https://www.aasara.telangana.gov.in/SSPTG/userinterface/portal/loginpage.aspx>

Table 1.18 Number of Aasara Pension Beneficiaries (in lakh) (2014-15 to 2020-21)

Year	Old Age	Widow	Disabled	Single Women	Others	Total
2014-15	135	128	39	35		338
2015-16	136	131	45	47		359
2016-17	134	140	48	12	55	389
2017-18	133	141	48	13	55	389
2018-19	132	144	49	13	55	393
2019-20	124	144	49	13	55	385
2020-21	124	144	49	13	55	385

In January 2021, the state government announced that it will soon sanction Aasara pensions to new applicants besides sanctioning old age pension to people who had attained 57 years.

Programmes Implemented to Achieve Target 1.4

Telangana State initiated and implemented programmes like Mission Bhagiratha and Swacch Bharath Mission to provide basic services like water and sanitation to the people and also implemented welfare programmes for the vulnerable groups.

(i) Mission Bhagiratha

The Mission of the Telangana State is to provide safe and potable drinking water to all the households. Government of Telangana has taken up Telangana Drinking Water Supply Project named “Mission Bhagiratha” as one of the flagship programmes of the State with a commitment to provide safe, adequate, sustainable and treated drinking water for the entire rural and urban areas of the State except Hyderabad urban agglomeration inside outer Ring Road.

Mission Bhagiratha was launched to ensure that no member of the household, especially the women, is compelled to walk to fetch water. Through this scheme, the intent is to supply piped drinking water to 80 lakh households and this project is nearing completion (Socio-economic Outlook 2019-20). The mission envisages supply of treated drinking water to each and every household at the rate of 150 LPCD (Municipal Corporations) and 135 LPCD (Municipalities), catering to the demand for next 30 years i.e., up to 2048. All the

targeted 23,968 rural habitations and 120 ULBs are covered with surface treated water in the entire state by constructing nineteen Intake structures, fifty new water treatment plants, 49,702 Km transmission networks etc., in addition to the existing system available. Intra village system is the last mile connectivity and is the critical part of the project. It involves providing robust, scientifically designed modern distribution network in each habitation. Out of 18,795 new overhead water storage reservoirs (OHSRs), 18609 are completed, 53,314 kms of intra distribution pipe line is laid and 55.46 lakhs household connections are completed. Already all the habitations targeted are supplied with potable piped water supply through the functional household tap connection except 126 isolated habitations which are located in forest areas, which also targeted to be completed by end of 2020. Since Telangana is going to achieve this by the end of 2020 there is no achievement target for the coming years, however Operation & Maintenance of the large-scale water utility assets will be a big challenge and adequate policies and action plan is being prepared.

For the supply of water distribution network in the peripheral circles of Hyderabad city, Urban Mission Bhagiratha Project in Hyderabad City was launched with a sanction of Rs 1900 crores to create fifty-six new storage reservoirs with 280 ml capacity along with laying down of 2100 pipeline network. Around 35 lakh population residing in the circles of Kapra, Uppal, Alwal, Gaddiannaram, LB Nagar, Kukatpally, Patancheru, Rajendranagar, R.C.Puram, Serilingampally have benefited out of

this project. Another component of this project provided water supply to 190 villages/habitations with 10 lakh population within ORR limits. The project cost was Rs 628 crores which was sanctioned under the Annuity Mode of contract to develop OHSRs/OBSRs of pipeline network to provide house service connections.

(ii) Swachh Bharath Mission

Introduction of Central Rural Sanitation Programme in 1986, subsequently, its conversion to Total Sanitation Campaign (TSC) (1999) helped in the increase of the coverage of household toilets to around 33 percent according to Census 2011. Nirmal Bharath Abhiyan (NBA) succeeded TSC with a major aim of accelerating sanitation coverage in rural areas to achieve Nirmal status by 2022 in all the village panchayats.

Swachh Bharat Mission (SBM) launched on 2nd October 2014 by replacing Nirmal Bharat Abhiyan is a centrally sponsored scheme and implemented in Telangana State. This programme has two components – the SBM Rural and SBM Urban. It also goes beyond the construction of toilets and includes solid and liquid waste management. Under this mission it is planned that all the Gram Panchayats (GP) will have toilets on saturation basis so that nobody should go for open defecation. SBM(G) is a comprehensive total sanitation scheme at Gram Panchayats level and the State Government focuses on integrated sanitation by taking up the construction of individual household latrines (IHHLs), community toilets and Solid and Liquid Resource Management (SLRM) by adopting integrated Sanitation in GPs to become 'Swachh Telangana' in line with 'Swachh Bharat' by 2nd October, 2019. As part of Swachh Bharat Mission massive drive has been taken up to attain Open Defecation Free (ODF) Telangana. As a result, incidence of diseases reduced, dignity of women enhanced, enrolment of school going adolescent girls increased, and there is a substantial improvement in rural thrift. 96.32 percent IHHL were constructed to ensure sanitation. In the Swachh Survekshan Grameen awards 2019, Telangana has been ranked the No.2 State in the

Southern Zone. Peddapalli district from Telangana has been ranked the No.1 district across the country in performance. This ranking was done based on a comprehensive set of parameters including surveys of public places like schools, Anganwadis, Primary Health Centres, Haat/ Bazaars, Panchayat and citizen's perception of services (Telangana Socio-economic Outlook 2019-20). Siddipet and Peddapalli districts received the 'Best Districts in the country' award as part of the World Toilet Day in 2020. Under the Gandagi Mukht Bharat programme, Telangana achieved the 1st position for maximum 'shramdaan' (effort) (Telangana Socio-economic Outlook 2022).

Government has given the utmost importance to rural sanitation to provide a good quality and healthy life to the targeted audience under the Swachh Bharat – Open Defecation Free Telangana programme to improve cleanliness and sanitation. The efforts put in by the government's massive drive and awareness programme could achieve the ODF status in all the districts. Awareness thus created has ensured that people not only constructed the toilets but they also used them, and as a result the villages have become cleaner, improving their health and quality of life.

Under the Palle Pragathi program, complete sanitation in the Gram Panchayats is undertaken using scientific methods of collection, disposal and management of solid and liquid waste. In majority of Gram Panchayats dump yards and compost pits with sheds has been completed. Further, household, institutional and community soak pits have been sanctioned on a large scale in the GPs. In the second phase of Palle Pragathi, households have been identified under the 'No one left behind' category and IHHLs have been sanctioned to these households. In order to support rural sanitation, potential donors are identified and contacted to support GPs in terms of financial advancements.

During Phase I of Palle Pragathi held during September – October 2019, debris was removed from nearly 94 percent of houses and open places, 98 percent of sites were cleared of bushes and mad

plants, 82 percent of defunct wells were filled, 96 percent of unused bore wells were closed, 98 percent of the insanitary areas had been sprayed bleaching and lime powder. In the second phase which took place for the first fifteen days in January, 2020, 98 percent of the roads are cleaned, 98 percent of drains were desilted, debris removal in 97 percent of the households and open places, 99 percent of the sites were cleared of bushes and mad plants, 92 percent of defunct wells and unused borewells were filled and closed respectively. Around 98 percent of sites were bailed out of stagnant water. Nearly 99 percent of pot holes were filled, almost 100 percent of public institutions and places were cleaned and 99 percent of shandies and market places were cleaned.

Pattana Pragathi program launched in February, 2020 aims to make urban areas clean with excellent greenery and sanitation facilities. Under this programme, activities like cleaning of bushes, removal of debris on road margins, drain cleaning, cleaning of open plots, public places and institutions, identification of public toilet spaces, removal of dilapidated buildings, closing the non-functioning wells are undertaken.

(iii) Welfare Programmes for the Vulnerable Groups

After formation of the State, the Government of Telangana has accorded highest priority to the betterment of the weaker sections of the society in order to bring them into the mainstream population. The Government initiated various beneficiary programmes and also reviewed the existing welfare programmes and enhanced the investment for these programmes of the poor belonging to weaker sections like Scheduled Caste (SC)/Scheduled Tribe (ST)/ Minorities/Backward Classes (BC). The government also initiated programmes in support of vulnerable sections of people such as old age, destitute, physically challenged and other vulnerable population.

The Government enacted 'Scheduled Castes and Scheduled Tribes Special Development Fund (Planning, Allocation and Utilisation of Financial

Resources) Act, 2017 for implementation of schemes for SC/ST welfare in a more focused manner. It is one of the major initiatives to safeguard the interests of SCs and STs. Under this programme, it is mandatory for all the departments to make specific budget allocations in proportion to SC/ST population to utilize them for their welfare. The Act also makes provision for carrying forward the unspent balances of any financial year to the next financial year.

The State Government has initiated several welfare programmes for SC and ST population for educational advancement, socio-economic development, protection of SCs, economic support schemes and implementation of schemes for social security. A major portion of the budget is spent on cash transfers to SC, ST, BC and minorities in the form of pensions, scholarships, marriage assistance and other welfare programmes. The Government has realized the importance of providing permanent source of livelihood to SCs to improve their economic status. A separate Corporation for SCs is looking after the economic support programmes for their upliftment across the State. To address their poverty on a permanent footing for their livelihoods, particularly in rural areas three acres of land has been provided to SC women under the land purchasing scheme to the landless poor.

The SC Corporation provides support to improve the economic condition of the SCs by promoting various schemes by giving subsidies. Additionally, the Corporation also provides various training programmes in different fields to SC youth coupled with boarding facility, and stipend. The Corporation also makes efforts to find placements for those SC candidates who are interested in getting employed. After the formation of the State, the Land Purchase Scheme was introduced by the Corporation with 100 percent subsidy with one year crop assistance and minor irrigation facilities like bore well drilling, motor pump sets and energisation. Under this programme, a maximum 3 acres of cultivable land is provided to the poorest of the poor SC families. The Corporation is also in coordination

with the Ground Water Department for drilling the borewells with funds from Corporation and SC Special Development Fund. Under the scheme Driver Empowerment Programme implemented by the SC Corporation, nearly 1500 vehicles were given to eligible SC drivers with 60 percent subsidy, remaining 40 percent is given as bank loan. For this programme, the Corporation has ties with well-known four-wheeler companies. The Corporation is also planning to introduce franchise entrepreneurship to SCs so as to shape them into successful entrepreneurs.

(iv) Scheduled Tribes Welfare

The total ST population of the Telangana State according to 2011 census is 31.78 lakhs which constitutes 9.08 percent of the total population of the State. There are 32 Tribal groups living in the State which include four (Particularly vulnerable Tribal Groups (PvTG) earlier known as Primitive Tribal Groups. The Tribal Welfare Department has been implementing diverse welfare and developmental programmes for the socio-economic development of the tribal poor living in 1,174 scheduled villages covering 3,559 habitations in the Scheduled Areas and in another 9,685 villages situated in non-scheduled areas across the State.

In order to bring socio-economic indices of STs on par with general population, Telangana State adopted the strategy of financial allocations in proportion to population of STs as against 9.08 percent of ST Population. The allocations were made to a tune of 9.25 percent of total Pragathi Paddu of the State as ST Special Development Fund for spending on schemes in Scheduled Tribe habitations. A separate Corporation for STs is looking after the economic support programmes across the State. Tribal sub-plan allocates for prioritised schemes for STs across line departments. The PvTGs are given due share and the Scheduled areas with more tribal population are allocated significant budget for development.

All applications for availing the welfare schemes by the ST population are obtained with the help of the Online Beneficiary Management and Monitoring

System wherein the registration of the beneficiaries will be according to the sanctions, release of funds directly into beneficiaries bank accounts, elimination of middlemen, fixing accountability on the officers and bankers and overall monitoring and evaluation.

(v) Backward Classes Welfare

The mandate of the BC Welfare department is to bring the BCs socially, educationally and economically on par with other developed communities and to enable them achieve an equal status in society. The department has a wide range of functions such as ensuring access to education and improve their career prospects, run and extend economic support schemes to bring them above poverty line coupled with skills for employment and most important, to reduce social inequalities. A separate Corporation for the upliftment of poor BC families is also functioning in the State.

(vi) Most Backward Classes Development Corporation

Most Backward Classes Development Corporation was established in 2017 to serve the most backward castes of BCs, with a sharp focus on improving the social, educational and financial conditions of most backward classes (MBC) among BCs. A sum of Rs.1000 crore has been allocated in the financial year 2018-19 and 13,367 beneficiaries were identified.

The Government has allocated funds for providing modern mechanized laundry units, skill development for imparting training in modern hair styles and beautician courses, and innovative schemes, common services and other economic support scheme for the welfare of BCs depending on the occupation of the families.

(vii) Minorities Welfare

The minorities viz: Muslims, Christians, Sikhs, Buddhists, Parsees and Jains constitute 14 percent of the total population of Telangana. In order to improve the socio-economic conditions of minorities the State Government has formulated several schemes. They were being implemented

for the economic development of minorities with the financial assistance from the Telangana State Minorities Finance Corporation by way of subsidy linked to the credit component from banks for setting up self-employment business units for their upliftment.

The Government has concern towards financial distress of the poor SC / ST / Minority / BC families in the state in performing the marriage of their daughters. The Government is providing one-time financial assistance of Rs. 1,00,116 under the scheme, the 'Kalyan Lakshmi' or 'Shaadi Mubarak' to the bride at the time of marriage to alleviate the financial distress. The initiative of the Government has also reduced child marriages, as benefits under the scheme are available only to the girls in the age of 18 years and above and also reduced the marriage debt burden on parents.

The existing housing programme is changed with the intension of providing dignified life to the poor by modifying the earlier model of housing scheme with a 2BHK (bed room, hall, kitchen) spacious house with a unit of cost of Rs. 6.29 lakh in rural areas and Rs. 6.05 in urban areas. The two-bedroom Housing scheme in the State provides house with 560 Sft. plinth area to the houseless BPL (below poverty line) families in a phased manner.

Target 1.5 *By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters*

The indicators for this target are not evolved in the state.

1.3 Challenges Ahead

Telangana is one of the few states recording a PHR of less than 10 percent in 2011-12 itself. During the course of time the state could address the issue of poverty, by innovative PAPs. But as the state progresses, it has to address the needs of chronic poor who are at the bottom end of income distribution. The study conducted by Young Lives

India (2016) on household poverty concluded that while there has been an increase in the wealth levels across all social categories, the gap/inequalities exist between the Other Castes, Scheduled Castes and Scheduled Tribe households. The study also highlighted the fact that households belonging to Other Castes and those households in urban areas have access to better quality of services and housing. Nearly one in ten of the sample continued to remain persistently poor and about a third of these households belonged to ST households.

In case of MGNREGS, the challenge is to enhance the performance of the Gram Panchayats such that it leads to the improvement of MNREGS, thus reducing the poverty level. It is also essential to create awareness among the beneficiaries with respect to requirements like unemployment allowance, minimum wages, guaranteed days of employment, unemployment allowance and access to complaint register.

1.3.1 The Way Forward

Social security needs to be provided to the poorest households in order to address persisting inequality between socially advantaged and socially disadvantaged households. While the urban poorest are very likely to face significant ongoing problems, the urban and rural differential remains very evident. Creation of growing connectivity between rural and urban areas, between the primary, secondary and tertiary sectors, was operational in the past and holds potential for the future too.

Enabling access to quality primary education and affordable healthcare will go a long way in increasing the incomes of the households. With the rise in incomes, households are able to access health and education facilities and also become better consumers. Rapid growth will result in the increase of government revenue leading to the expansion of social expenditures. The policies and programmes of the Government are to be paved in such a manner to increase growth and also create employability. Extension of IEC activities to the

tribal and remote areas would help in creating awareness on the health, sanitation, education aspects among the poor and poorest of the population.

In order to reduce poverty, it becomes highly essential to develop manufacturing and services sector to provide employment opportunities to the vulnerable households. To bring relief to the rural poor, manufacturing and services should grow alongside the agriculture sector. Development of agro-based and agriculture allied industries would pave a long way in creating

employment opportunities for the poor rural youth. Forthcoming efforts need to orient towards job creation in more productive sectors, which until now has been lukewarm offering very few salaried jobs. There is a need for creation of jobs that offer stability and security. Added to this, the government efforts should be towards bringing more women and vulnerable sections into the job market.

Efforts should go towards sustaining the Palle Pragathi and Pattana Pragathi programme on a continuous basis so as to reduce the poverty levels.

Annexure 1.1 Average Number of Days of Employment Per Household Across Districts

District	2018-19	2019-20
Adilabad	47.6	46.6
Bhadradri Kothagudem	45.3	42.2
Jagtial	43.2	45.5
Jangaon	46.8	42.7
Jayashanker Bhopalapally	40.9	40.6
Jogulamba Gadwal	37.2	37.1
Kamareddy	52.7	48.1
Karimnagar	40.2	35.8
Khammam	38.0	41.6
Kumram Bheem(Asifabad)	47.1	42.4
Mahabubabad	41.4	39.8
Mahabubnagar	43.7	35.3
Mancherial	43.6	39.8
Medak	45.4	45.6
Medchal	32.2	30.1
Mulugu	45.7	46.1
Nagarkurnool	44.5	40.5
Nalgonda	35.1	38.0
Narayanpet	37.8	34.4
Nirmal	53.5	51.6
Nizamabad	45.9	46.6
Peddapalli	42.7	41.3
Rajanna Sircilla	51.2	46.9
Rangareddy	56.9	49.9
Sangareddy	45.6	43.7
Siddipet	54.4	49.1
Suryapet	35.5	31.5
Vikarabad	56.4	48.1
Wanaparthi	45.7	41.1
Warangal (Urban)	39.9	42.6
Warangal Rural	39.9	40.9
Yadadri Bhuvanagiri	35.4	34.5
Telangana	44.3	42.4

Source: MGNREGA.nic.in

Annexure 1.2 Share of Women, SC/ST and Others in Total Workers in MGNREGA as on 7th January 2021

District	Women	SC/ST	Others
Adilabad	49.1	63.1	36.9
Bhadradri Kothagudem	54.7	73.4	26.6
Jagtial	67.0	31.8	68.2
Jangaon	56.6	40.2	59.8
Jayashanker Bhopalapally	52.3	36.3	63.7
Jogulamba Gadwal	50.9	23.9	76.1
Kamareddy	51.6	33.9	66.1
Karimnagar	62.9	27.9	72.1
Khammam	55.7	47.8	52.2
Kumram Bheem (Asifabad)	48.9	54.2	45.8
Mahabubabad	52.4	60.8	39.2
Mahabubnagar	56.7	33.8	66.2
Mancherial	53.1	48.0	52.0
Medak	52.3	33.2	66.8
Medchal	74.3	37.5	62.5
Mulugu	52.4	54.3	45.7
Nagarkurnool	54.9	43.0	57.0
Nalgonda	55.4	42.2	57.8
Narayanpet	54.9	23.5	76.5
Nirmal	54.5	39.7	60.3
Nizamabad	60.5	37.9	62.1
Peddapalli	57.8	24.5	75.5
Rajanna Sircilla	58.1	37.1	62.9
Rangareddy	54.2	45.7	54.3
Sangareddy	51.9	48.3	51.7
Siddipet	55.6	27.7	72.3
Suryapet	54.0	40.3	59.7
Vikarabad	50.6	41.9	58.1
Wanaparthi	55.9	27.7	72.3
Warangal (Urban)	59.8	29.1	70.9
Warangal Rural	55.1	39.6	60.4
Yadadri Bhuvanagiri	66.7	32.6	67.4
Telangana	54.9	41.4	58.6

Source: MGNREGA.nic.in

Annexure 1.3 Male –Female Wages and Change in Wages during 2018-2020

District	Male-Female Wage Ratio			Male Wage		Female Wage	
	2018-19	2019-20	2020-21	% Change 2019-2018	% Change 2020-2019	% Change 2019-2018	% Change 2020-2019
Adilabad	1.01	1.01	1.01	5.93	10.5	5.60	10.9
Bhadradi Kothagudem	1.03	1.04	1.03	2.28	15.6	0.73	17.2
Jagtial	1.03	1.03	1.03	5.26	7.6	5.22	7.4
Jangaon	1.05	1.08	1.07	4.20	4.0	1.42	5.0
Jayashankar Bhupalpally	1.01	1.02	1.03	0.80	1.2	0.24	-0.2
Jogulamba Gadwal	1.04	1.07	1.08	9.12	15.7	5.59	15.0
Kamareddy	1.01	1.02	1.02	3.08	12.7	2.15	12.6
Karimnagar	1.07	1.07	1.07	5.14	5.4	4.70	5.3
Khammam	1.03	1.06	1.07	6.92	6.2	4.51	5.6
Kumram Bheem Asifabad	1.01	1.02	1.02	1.76	13.5	1.22	13.4
Mahabubabad	1.04	1.06	1.04	0.03	4.1	-2.41	6.1
Mahabubnagar	1.01	1.01	1.01	8.67	6.5	8.89	6.4
Mancherial	1.01	1.03	1.03	3.50	16.9	2.09	17.0
Medak	1.01	1.02	1.03	8.83	5.9	7.90	5.5
Medchal	0.99	1.00	0.99	9.72	8.9	8.68	9.2
Mulugu	1.01	1.01	1.01	1.37	11.8	1.19	11.7
Nagarkurnool	1.02	1.03	1.02	2.21	6.8	1.45	7.4
Nalgonda	1.01	1.03	1.04	7.50	13.5	4.67	12.4
Narayanpet	1.04	1.05	1.05	3.50	8.7	2.93	8.6
Nirmal	1.03	1.02	1.03	3.62	8.9	3.66	8.3
Nizamabad	1.03	1.04	1.07	2.43	11.5	1.72	8.8
Peddapalli	1.03	1.04	1.05	2.33	9.2	1.32	7.4
Rajanna Sirsilla	1.04	1.03	1.04	5.48	5.8	5.59	5.3
Rangareddy	1.02	1.02	1.02	3.51	13.3	3.52	13.6
Sangareddy	1.00	1.02	1.02	9.02	6.7	7.15	7.3
Siddipet	1.02	1.02	1.03	2.29	11.6	2.34	11.3
Suryapet	1.02	1.05	1.03	3.58	18.3	1.32	19.8
Vikarabad	1.01	1.02	1.01	5.18	7.9	4.34	8.9
Wanaparthy	1.01	1.04	1.02	1.10	12.6	-1.26	14.5
Warangal (Urban)	1.04	1.08	1.08	2.67	6.4	-0.77	6.1
Warangal Rural	1.04	1.07	1.07	5.84	2.8	3.69	2.0
Yadadri Bhuvanagiri	1.01	1.04	1.02	5.03	6.4	1.80	8.6
Telangana	1.02	1.03	1.03	4.50	9.4	3.32	9.5

Source: MGNREGA.nic.in

Annexure 1.4 Aasara Scheme - Live Pensioners (Report as on Date :05-Jan-2021)

Sl. No	District Name	Pensions							Financial Assistance		Total
		OAP	Dis-abled	Widow	Weav-ers	Toddy Tap-pers	HIV Patients	Filaria Patients	Beedi Work-ers	Single Women	
1	Adilabad	22358	7116	28911	19	41	869	585	5521	2232	67652
2	Bhadradi-Kothagudem	35526	12615	47246	18	144	1034	151	3	5804	102541
3	Hyderabad	55952	28257	98170	6	0	9432	36	54	9169	201076
4	Jagtial	50190	17217	41378	2202	3469	595	1775	89281	4581	210688
5	Jangaon	25409	10970	24944	1539	2862	422	521	2019	1520	70206
6	Jayashakar-Bhupalpally	20821	6560	20778	840	1624	0	38	42	1210	51913
7	Jogulamba-Gadwal	21474	10787	27791	1926	382	0	0	52	2072	64484
8	Kamareddy	43139	18252	48609	634	709	1164	525	36947	4427	154406
9	Karimnagar	43668	20678	33891	2750	3664	2230	572	9371	3291	120115
10	Khammam	56191	25831	64466	453	3125	2485	1249	1	7990	161791
11	Komarabheem-Asifabad	18417	5818	20540	495	137	0	482	82	2546	48517
12	Mahabubabad	37043	14974	39236	373	2898	0	231	12	2842	97609
13	Mahabubnagar	29267	13226	41633	496	629	2104	53	1789	4295	93492
14	Mancherial	30757	12140	38117	303	923	0	270	2338	2439	87287
15	Medak	33144	8957	44907	525	890	0	490	14153	4266	107332
16	Medchal-Malkajgiri	29381	20033	52166	142	416	0	125	169	5258	107690
17	Mulugu	13480	3853	16105	195	229	0	25	90	1464	35441
18	Nagarkurnool	41294	12947	41718	241	731	0	12	23	3699	100665
19	Nalgonda	58241	30023	74190	2858	7421	1700	765	0	7283	182481
20	Narayanpet	26296	9686	30407	2806	976	0	135	1228	3181	74715
21	Nirmal	29687	9902	36433	44	278	0	224	62585	2124	141277
22	Nizamabad	53231	19152	70198	201	1047	1559	398	96131	9993	251910
23	Peddapalli	30016	12933	29424	759	2211	1170	364	694	2410	79981
24	Rajanna-Sircilla	27074	10317	22506	3808	2174	0	910	43455	1832	112076
25	Rangareddy	55284	26426	77358	764	2047	0	43	16	5967	167905
26	Sangareddy	50164	15508	67694	769	830	1956	397	95	7418	144831
27	Siddipet	55133	15129	54093	2417	3020	869	2594	44165	3420	180840
28	Suryapet	42942	19459	53625	892	6812	804	1888	0	6648	133070
29	Vikarabad	32457	12508	47880	163	451	1063	212	40	4593	99367
30	Wanaparthi	24853	11128	26909	670	442	0	6	992	2555	67555
31	Warangal Rural	34343	13311	34586	1466	3178	0	157	2046	2392	91479
32	Warangal Urban	33161	14778	42363	2700	2463	2773	450	7065	2795	108548
33	Yadadri-Bhuvanagiri	30957	13268	33555	3173	5828	0	463	895	2531	90670
	Total	1191350	483759	1431827	36647	62051	32229	16146	421354	134247	3809610

Annexure 1.5 SDG Target 1.3

Target	National Indicator (NIF)	State Indicator (SIF)	Baseline	Target		
			2020	2022	2026	2030
1.3	1.3.2: Number of Beneficiaries under Integrated Child Development Scheme (ICDS)	1.3.2.1a: Pregnant Women enrolled at Anganwadi centres	423832	481871	558746	671471
		1.3.2.1b: Pregnant Women at catchment areas of Anganwadi centres	650650	688388	744994	839339
		1.3.2.2a: Pregnant and Lactating mothers provided with supplementary nutrition	396583	457777	530809	637897
		1.3.2.2b: Pregnant and Lactating mothers needed supplementary nutrition	423832	481871	558746	671471
		1.3.2.3a: Children enrolled at Anganwadi centres	1565708	1748582	2018527	2416282
		1.3.2.3b: Children at catchment areas of Anganwadi centres	2203632	2331443	2523159	2842685
		1.3.2.4a: Children between 7months and 6years provided with supplementary nutrition	1399529	1398866	1655192	2029677
		1.3.2.4b: Children between 7months and 6years in the catchment area required supplementary nutrition	1565708	1748582	2018527	2416282
		1.3.2.5a: Enrolment of adolescent girls (out of school) at Anganwadi centres (%)	75%	80%	85%	95%
		1.3.2.5b: Adolescent girls (out of school) are provided with supplementary nutrition (%)	60%	70%	80%	90%
	1.3.3	1.3.3 Proportion of the population (out of total eligible population) receiving social protection benefits under Mahatma Gandhi National Rural Employment Guarantee Act(MGNREGA) Proportion in eligible population	4073707 (27.5)	4888448 (33.1)	5377293 (36.7)	5646158 (40.0)
1.3	1.3.4	1.3.4.Number of Self Help Groups (SHGs) formed and provided bank credit linkage	232121			
	1.3.5. Proportion of the population (out of total eligible population) receiving social protection benefits under Maternity Benefit	1.3.5. Proportion of the population (out of total eligible population) receiving social protection benefits under Maternity Benefit	78	90	100	100
	1.3.6	1.3.6: Proportion of Senior citizens with access to institutional assistance	10896919 (75%)	13076303 (80%)	14383933 (85%)	15103130 (90%)

Annexure 1.6 SDG Target 1.4

Target	National Indicator (NIF)	State Indicator (SIF)	Baseline	Target		
			2019-2020	2022-2023	2025-2026	2029-2030
1.4	1.4.1 Population with access to drinking water, sanitation, electricity, mobile telephones, bank accounts, pensions	1.4.1.1 Proportion of rural households with access to safe drinking water	98.2 (2018 NSSO 76 th Round)			
		1.4.1.2 Proportion of urban households with access to safe drinking water	98.4(2018 NSSO 76 th Round)			
		1.4.1.3 Proportion of rural households with direct treated water supply	98.3			
		1.4.1.4 Proportion of urban households with treated water supply	100	100	100	100
		1.4.1.5 Proportion of rural households with access to sanitation (toilets)	77.5			
		1.4.1.6 Proportion of urban households with access to sanitation (toilets)	98.4			
		1.4.1.7 Proportion of rural households having accessing to toilets connected to sewage system/septic tank/twin pit	83.0			
		1.4.1.8 Proportion of urban households having accessing to toilets connected to sewage system/septic tank/twin pit	98.2			
1.4	1.4.2 Population with access to electricity	1.4.2. Proportion of rural households with access to electricity	99.6			
		1.4.2.2 Proportion of urban households with access to electricity	100			
	1.4.3 Accounts belonging to women under MGNREGA	1.4.3 Proportion of accounts belonging to women under MGNREGA Percentage to total workers	2768419 (68)	3322103 (68)	3654313 (68)	3837029 (68)
	1.4.4 Proportion of population having bank accounts	1.4.4. Number of bank accounts per lakh population	3.92			
	1.4.5 Aasara	1.4.5 All pensions – Aasara (old age pensions and others)	3849867			
	1.4.6 Number of mobile telephones	1.4.6.1 Number of mobile connections per 100 persons	39.30			
		1.4.6.2 Total telephone connections	42.57 million			

Sustainable Development Goal - 2

End Hunger, Achieve Food Security, Improve Nutrition and Promote Sustainable Agriculture



Vision - Making Farming Viable

.....to see that all vulnerable people have access to enhanced food security in terms of quantity, quality and nutrition security by widening the coverage, (Hunger)..... achieve highest levels of agricultural productivity through adoption of good agricultural practices, supply of quality agricultural inputs, (agriculture).....promoting holistic growth of the horticulture sector through research, technology promotion, extension, post-harvest management, processing and marketing, leading to prosperity of farm households and thereby doubling farmers income.

Achievements

- 99.96 percent of beneficiaries covered under National Food Security Act, 2013.
- 100 percent of seeding of Aadhar with PDS, first State in the Country
- 55.54 lakh Soil health cards were distributed in 2018-19
- 30.16 Percentage of Agriculture Mandis enrolled e-Markets

Challenges

70 Percent of children (0-59 Months) are anaemic.
33.1 Percentage of children (0-59 Months) are Stunted. 33.1 Percentage of children (0-59 Months) are Over-weight

2.1 The Context

Total Eradication of Hunger

Ending hunger, formed a key goal of millennium development goal (MDG) which today is linked to the SDG 2 that envisages a world free of hunger in an environment where everyone, the poorest of the poor enjoys food security, which calls for steps to ensure improvement in nutrition for all. Now this is possible only along with promoting sustainable agriculture that helps in satiating growing hunger in the world, especially targeting the most vulnerable sections of the society in countries that are the neediest. India that is a signatory to these goals, has taken upon itself to meet all the SDGs and when it comes to total eradication of hunger. The Sustainable Development Goal aim to end all forms of hunger and malnutrition by 2030, making sure all people, especially children and the more vulnerable sections of the society, have access to sufficient and nutritious food all year round.

ZERO HUNGER is the Goal 2 among the 17 Goals, that seeks sustainable solutions to end hunger, achieve food as well as nutrition security and is core to an integrated approach for achieving Sustainable Development by promoting sustainable agriculture. There is an increase in hunger across world in recent years.

The MDG Goal 1 is 'ERADICATE EXTREME POVERTY AND HUNGER' linked to SDG Goal 2, 'ZERO HUNGER.' The MDG Goal 1 has mixed experience at the country and state level. The Telangana State Experience in goal 1 is mixed, like there is an improvement in the reduction of poverty and decline in MMR and CMR.¹⁹

¹⁹ "Millennium Development Goals in Telangana – Precursor of Sustainable Development Goals", CESS, 2015.



The critical feature of the Sustainable Development Goals is, the interconnections among them in achieving the targets through inclusive and overall development. Goal 2, which focuses on food and nutrition security – “End hunger, achieve food security and improved nutrition through sustainable agriculture,” is linked to different other Sustainable Development Goals. Figure depicts the interconnected SDGs to Goal 2, i.e., ZERO HUNGER.

SDG Goal 2: Zero Hunger

The goal ZERO HUNGER promotes sustainable agricultural practices of improving the livelihoods and capacities of small-scale farmers, allowing equal access to land, technology, and markets. This entails international cooperation to ensure investment in infrastructure and technology to improve agricultural productivity especially in developing countries. Together with the other goals set out here, we can end Hunger by 2030 (UNDP, 2015).

After several strategies introduced towards ending Hunger, globally, since 2015, there has been a decline in the percentage of people suffering from Hunger, which is measured by the prevalence of undernourishment. United Nations Report 2015 estimated that nearly 690 million people are hungry, or 8.9 percent of the world population and it is up by 10 million people in one year and by nearly 60 million in five years (UN, 2015).

Simultaneously, a profound change of the global food and agriculture system is needed in order to nourish more than 690 million people who are hungry today – and the additional 2 billion people the world will have by 2050. Increasing agricultural productivity and sustainable food production through targeted initiatives, schemes, and practical action plans are crucial to alleviating Hunger’s perils (UN, 2015).

According to the World Food Programme, 135 million suffer from acute Hunger, primarily due to human-made conflicts, climate change, and economic downturns. The COVID-19 pandemic could now double that number, putting an additional 130 million people at risk of suffering acute Hunger by the end of 2020.

In India there has been an increase in the food production continuously and availability of food. India identified focussed areas and adopted targeted approach towards achieving food and nutrition security in the country, increase in Agriculture productivity and rising of Income from agriculture and ensuring the Climate adaptive, Agriculture and sustainability are important in achieving the Goal 2.

SDG Goal 2: Zero Hunger	Target	Target Dimension	The goal of Each Target by 2030
	2.1	Universal Access to Safe and Nutritious Food	For all people
	2.2	End all Forms of Malnutrition	All adolescent girls, pregnant, lactating and older persons
	2.3	Increasing revenue in agriculture and allied activities	Substantially increase the agriculture yield by adapting modern methods.
	2.4	Ensure Sustainable Food Production	Eliminate the non-advantageous agriculture practices
	2.5	Accruing benefits from genetic resources	Strengthen capacity to achieve benefits from genetic heritage
	Means of Implementation		
	2.a	Investment in Agriculture research and extension services	Support agriculture research and extension services
	2.b	Integrating the world agricultural markets	Reduce the trade barriers between countries
	2.c	Promote food commodity markets	Ensuring the proper functioning of food commodity markets

NITI Aayog has evaluated the overall country and Telangana State performance towards achieving Goal of Zero Hunger, in the Sustainable Developmental Goals India Index (SDGII) 3.0 report. Seven national level indicators have been identified in reference to this goal, which capture three out of the eight SDG targets for 2030. The seven national indicators are – (i) Percentage of beneficiaries covered under National Food Security

Act (NFSA) 2013, (ii) Percentage of children under five years who are under weight, (iii) Percentage of children under five years who are stunted, (iv) Percentage of Pregnant women (15-49 Yrs) who are anaemic, (v) Percentage of adolescents aged 10-19 years who are anaemic, (vi) Rice and wheat produced annually per unit area (Kg/Ha) (vii) GVA(constant prices in agriculture per worker (in Lakhs/worker).

Table 2.1 Performance of Telangana and India for SDG 2 on “Zero Hunger”.

Target	Indicator	Score		
		Telangana	India	Target
2.1	Percentage of beneficiaries covered under National Food Security Act (NFSA) 2013	97.98	99.51	100
2.2	Percentage of children under five years who are under weight	30.8	33.4	1.9
2.2	Percentage of children under five years who are stunted	29.3	34.7	6
2.2	Percentage of Pregnant women (15-49 Yrs) who are anemic	49.8	50.4	25.2
2.2	Percentage of adolescents aged 10-19 years who are anaemic	32.1	28.4	14.2
2.3	Rice and wheat produced annually per unit area (Kg/Ha)	3448.32	2995.21	5322.08
2.3	GVA (constant prices in agriculture per worker (in Lakhs/worker)	Null	0.71	1.22

Source: SDG India Index, 2020-21.

Based on these seven indicators, the SDG Index Score on Goal 2 for India in 2019-20 stands at 47, and the Telangana State score is 50, just above the National Score. SDG Index Score for Goal 2 ranges between 19 and 97 for States and UTs. Chandigarh and Kerala are the top-performing among States and UTs, respectively. Eleven states and UTs bagged a position in the category of Front Runners (65-99). However, twelve states along

with UTs are in performer category and fourteen States and UTs fell behind in the Aspirants category (0-49).

Vision

The vision of the State for the Goal can be witnessed in two parts, on eradicating hunger and agriculture development.

Hunger

“The vision of the state is to see that all vulnerable people have access to enhanced food security in terms of quantity, quality and nutrition security by widening the coverage, in a life cycle approach to achieve a better human resource development so as to enable enhanced productivity and improved livelihoods.”

As part of realising its vision the Telangana State has committed to ending Hunger, or no person in the state shall sleep with Hunger. Around 50.97 lakh families or 1.91 crore people are eligible for subsidised rice under the NFSA. However, State Government has added 36.75 lakh families or 90.34 lakh beneficiaries taking the tally of total households covered to 87.73 lakh and beneficiaries to 2.83 crore persons.

The State also has enhanced the quantity of food commodities per card on the Antyodaya food security cards (AFSC) as well as Annapurna cards (AP) and along with enhancing quantity it has also done away with family ceiling limits in case of food security cards (FSC).

To ensure that produced agriculture commodities shall feed every concerned person, various measures have been taken up at the department level. Transparency has been brought in the Civil Supplies department. Telangana has become the first state in the country, which completed the seeding of Aadhar and PDS covering 85.64 lakh ration cards covering the 2.83 crore beneficiaries.

In line with the life cycle approach, the state government has undertaken social provisioning of nutritious food to the pregnant woman, lactating mothers and children, through the ICDS. Telangana Government has come up with initiatives like Arogyalaxmi²⁰, a hot cooked meal Balamrutham, a therapeutic take home powder and Care and Nutrition Counselling Services as part of supplementary nutritional programmess.

The State also is providing ‘super fine rice’ (Sanna

Biyyam) to children in government schools as part of the mid-day-meal from Jan 1, 2015 along with doing away of restriction on quantity of rice served with an addition of two eggs per week to provide protein rich food to children, with an additional financial cost of Rs 97.72 crores. All residential schools are also supplied with the same quality of rice and the scheme implemented with standard operating procedures.

Agriculture Development

“To achieve highest levels of agricultural productivity in Telangana through the dissemination of improved technology, ensuring adoption of good agricultural practices and timely supply of quality agricultural inputs leading to prosperity of farm households and thereby doubling farmers income in Telangana.”

Telangana, a newly formed State has been placing farmers at the centre-stage in formulating the schemes to enhance profitability of farming, and increase farmers income level. The state implemented schemes supporting agriculture like 24 hours quality power supply; access to much deprived irrigation through tank rejuvenation under the Mission Kakatiya and redesigning of major irrigation projects; cash transfer to farmers the Rythubandhu and farmers’ group life insurance scheme. The schema of the Telangana State is to strengthen the state agriculture department to



²⁰ The undivided state of Andhra Pradesh implemented the scheme ‘One full meal’ which was a maternal on-the-spot feeding and counselling programme limited to few high-risk locations in 2013. After state formation the Govt. has universalised the scheme as Arogya Lakshmi in 2015.

enable it to direct the farmers towards achieving greater prosperity. The changing climatic conditions too requires a significant transformation from existing traditional farming methods and the concerned (Agriculture) department should be able to guide farmers, educate them and impart better farming practices.

Agriculture in Telangana State is sustainable as the percentage of small holders (marginal and small holdings) in all holdings is around 88 percent and the area cultivated by them accounts to around 62 percent.

State has also a vision for the Sustainable Agriculture and evolved to achieve organic farming in the coming years. The agriculture department has identified 36 mandals in dryland areas of six districts of Adilabad, Asifabad, Narayanpet, Mahbubnagar, Vikarabad and Sangareddy to encourage millet cultivation in 7200 acres under Millet Mission as part of NFSM and RKVY.

At all India, FCI has procured 1.15 metric tons of paddy. Telangana's share is 64 lakh tons contributing 55 percent of the total procurement (June 2020). Farmers in the Telangana State have proved to be capable of raising agriculture production given adequate support. The policy will educate farmers on the uses of staggered arrival of produce at procurement centers, protection of soil fertility, the ability to analyse agricultural markets, and research. Decentralized paddy procurement was taken up during the Covid 19 pandemic pressing the SHG network through the 'online procurement management system' which proved to be beneficial to farmers.

It is also a vision of the Telangana State *"Along with becoming an agricultural State; it shall also develop allied fields such as milling and food processing"*

Telangana State is disseminating the improved technology through significant extension reach and ICT based tools. To increase revenue on investment in agriculture, it intended to train and motivate the farmers on Integrated Nutrition

Management, Integrated Pest Management and Waste Management, and Post-harvest Technology. There shall be constant suggestions and communication to the farmers from the agriculture research and scientific bodies. In this regard, Professor Jayashankar, Telangana State Agricultural University along with financial support of Agricultural Marketing Department is disseminating timely, comprehensive information on agricultural commodities for better decision-making by the farming community, researchers, and policymakers. It is entitled to guide the farmers in mitigating the effect of natural calamities.

The agricultural market environment is changing with an unprecedented speed and in very diverse ways around the world. These changing aspects affect not only farm prices but also farm income.

The majority of the State's rural producers cannot understand and interpret the market and price behaviour to their advantage. Hence, market information and intelligence play a pivotal role in enabling farmers to make informed decisions about what to grow, when to sell, and where to sell. With the help of production plans based on the farming situation, there can be a growth in crop and land productivity. Keeping this in view, the Telangana state is devoted to increasing the value-added agricultural production to fetch reasonable remunerative prices for the produce, also doubling the farmers' income. The state also has formalized Telangana food processing policy in 2017 enabling the government to interlink the food processing sector with agriculture, horticulture, aquaculture, dairy, meat and other food production sectors for improving the income of farmers. Further the policy recommends the setting up of district specific FP industries, to create a value chain of farm and other food products to boost food processing capacity of the State by at least 20 per cent. As the state inherited agriculture as a low growth sector ridden with many deficiencies, it intends to play prominent role in placing agriculture on a high growth trajectory.

Horticulture

The vision of the Telangana horticulture department is 'To promote holistic growth of the horticulture sector through research, technology promotion, extension, post-harvest management, processing and marketing, in consonance with comparative advantage of each region and its diverse agro-climatic conditions'.

Telangana being a landlocked state, is endowed with bountiful resources, fertile soils. Apart from agriculture, horticulture has been identified as one of the focus sectors for the Telangana State development, as it is a significant contributor to the economy. The horticulture sector contributes 40.5% to Agriculture GSDP. Horticulture crops are grown in an area of 12.40 lakh acres with a production of 71.52 lakh MTs. Horticulture has vast scope and potential for processing and value addition besides employment generation to the rural poor's semiskilled and skilled. The area under Horticulture crops has been increased from 9.59 lakh acres to 11.55 lakh acres.

2.2 Target Wise Depiction of Indicators

Target 2.1: *End Hunger, Achieve Food Security and Improve Nutrition and Promote Sustainable Agriculture*

As poverty and hunger lead to undernourishment, achievement of the target 2.1 (end hunger) reflects reducing and finally eliminating the prevalence of undernourishment, which is, therefore, one of the target's monitoring indicators. Prevalence of undernourishment is generally defined as the percentage of population who are short of (insufficient) of minimum requirement of calorie intake necessary for leading a healthy life.

In this regard, the Telangana state government is committed to achieving the target 2.1 while reducing undernourishment among the children in the state. The incidence of underweight children in the state for the baseline is derived as 28.5%, the short-term target for 2022 is to reduce it to 22%, the medium-term target is to reduce it to 20% by 2026, the end-term target is to reduce the

same to 15% by 2030. On the other, the Telangana state government aims to increase the weight of underweight children who gain weight under supervised feeding through ICDS or Anganwadi Services. It is implementing the supplementary nutrition programs (SNP) through the 35700 Anganwadi Centers (AWCs) network benefiting nearly 16.7 lakh children in the state. The mid-day-meal scheme is also implemented for children attending elementary-level classes (1-8) across all the public schools in the state. Alternatively, the children gaining weight under supervised feeding which is at 60 % has a target to be achieved at 80 %. The problem of underweight among children below five is more in rural areas at 38% vis-à-vis 28.5 % for the state (CNNS. MoHFW, GoI, 2016).

Target 2.2: *By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons*

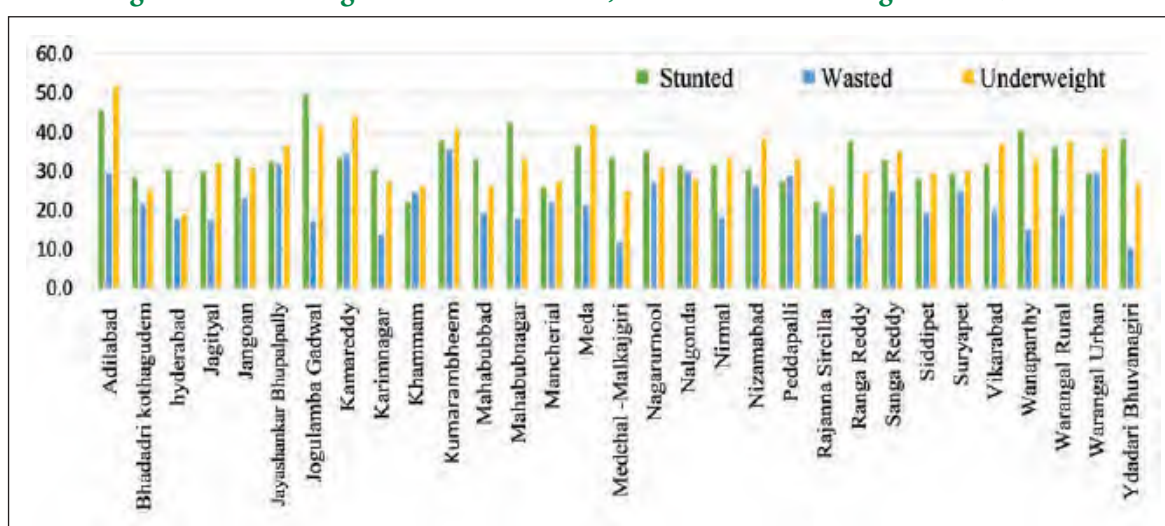
The recent NFHS 5 (2019-20) survey shows that malnutrition levels have increased, percentage children stunted increased to 33% (increase of 5%) and that of wasted increased to 21.7%. Similarly, percentage of children severely wasted almost doubled from 4.8 to 8.5 and that of underweight increased from 28.4 to 31.8 percent. The present districts of Adilabad, Jogulamba Gadwal, Kamareddy, Asifabad, Medak, Nizamabad, Rangareddy, Vikarabad, Warangal (rural) have higher percentage of underweight children. The state government is taking special measures to address the issue.

The state intends to reduce the incidence of stunting to 16% and wasting to 8% by 2030. Adilabad, Kumarambheem, Peddapally, Kamareddy, Nagarkurnool, Sangareddy, Warangal (urban), Suryapet fare lower than the state average in the incidence of wasting of children under 5 years (NFHS-5). Moreover, in all these indicators the incidence is higher in rural areas.

The incidence of malnutrition among women (measured by BMI score lower than 18.5kg) is 22.9% (NFHS-4) decreased to 18.8 in NFHS-5 in the state and the commitment is to reduce it to 16%; while the percentage of pregnant women aged 15-49 who are anaemic is higher at 48.2% and the commitment is to reduce to at least 30% by 2030 but it has increased to 53% according to NFHS-5. Another indicator of malnutrition, percentage of children aged 6-59 months anaemic is at 60.7% which is targeted to reach at 30%

by 2030 but which is increased to 70%. Except for the districts of Hyderabad, Rangareddy and Khammam rest of the others fall below the state average of women with low BMI. Adilabad, Khammam, Nizamabad, Mahbubnagar, Nalgonda and Warangal have higher than state average percentage of anaemic children and the highest incidence of pregnant women anaemic is found in Khammam followed by Mahbubnagar and Nalgonda. Burden of malnutrition is more among the rural women. (Figure 2.1).

Figure 2.1: Percentage of Children Stunted, Wasted and Underweight below 5 Years



Source: National Family Health Survey(NFHS) -5, 2019-2020.

The State Government has initiated all the necessary interventions and implementing supplementary nutrition programs (SNP) through the centers of ICDS or Anganwadi services. Telangana government initiated its state-specific interventions like Arogyalaxmi, Balamrutam for the nutritional supplementation among women and children while implementing National Nutrition Mission (or as it is known as Poshan Abhiyan). Also, there are non-nutritional interventions in the Arogya Lakshmi programme in line with WHO guidelines for a positive pregnancy outcome, health care interventions treating childhood diseases while improving their nutritional status.

In accordance with its vision the Telangana State has geared up its Civil Supplies Department's with hi-tech mode of operations to handle the

distribution of grains under TPDS efficiently. The social provisioning of food, a means to reduce the prevalence of malnutrition, targeting pregnant women, lactating mothers and children has been undertaken with state enterprise (manufacturing the fortified pre mix, therapeutic food) model ensuring adequate nutritional intake including micro nutrients and high energy food by children with due attention to quality and food safety. Under Arogyalaxmi a freshly cooked full meal is provided with rice, pulses, and vegetables catering to 40-45 percent of daily calorie intake. Similarly, Balamrutham scheme provides 100 grams of fortified take home ration to feed children lower than 3 years of age which fulfils 50 % of recommended dietary intake along with 16 eggs per month. Children aged 3 to 6 years also get the same freshly cooked food in AWCs. They are

also fed with ready to eat extruded snack. The state Govt. is spending around three times more than the norm of the GoI per head for providing hot cooked meal to women and Rs 1.26 higher in case of hot cooked meal along with snack for children. Though it cannot be a generalized finding, pregnant women and lactating mothers visiting AWCs were appreciative of the hot cooked meals (Bhavani RV and Rohit Parasar 2018).

Target 2.3: *By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.*

The goal of this target is the doubling of farmers' income. The state has taken up plethora of schemes for strengthening of agriculture as the sector was historically in a disadvantaged and distressed condition. These initiatives taken by the State have resulted in increased cultivated area and agriculture production as well as economic and social security to farmers. The structure of landholdings is skewed towards small holdings. The initiatives like Rythu Bandhu, Rythu Bima, creation of rural infrastructure and so on are aimed to support farming and to contribute to transform agriculture to a profitable livelihood in the State.

According to Agriculture Census 2015-16, in Telangana 28.56 percentage of farmers are marginal class with 1706 Th. Hec. While the percentage of small size and Small - Medium Size in overall operating land holding 33.10 and 24.56 with 1977 and 1467 Th. Hec. Whereas the Medium and Large size covers only 11.52 and 2.26 percentage with 688 and 135 thousand hectares (Table 2.3).

Rythu Bandhu (Agriculture Investment Support Scheme): Telangana Government intend to relieve the farmers from debt burden and also for providing investment support to Agriculture and Horticulture crops by way of a grant @ Rs. 5000/- per acre per farmer each season for purchase of

inputs like (1) Seeds, (2) Fertilizers, (3) Pesticides, (4) towards Labour and other Investments in the field operations of farmers' choice for the crop season. During Vanakalam 2020 an amount of 7285.70 Crores has been transferred benefitting 57.98 lakh pattadars. Further, this department has transferred an amount of 6886.19 crores directly into the bank accounts 54.21 lakh pattadars within 36 hours with the help of latest technology, creating a new record in extending of Rythubandhu assistance. (Table 2.4).

Farmers investment support scheme introduced in Telangana State is highly cherished scheme at country level. This particular model of scheme is adopted in several states and country with variations. But, the scheme is providing investment support to farmers (Land owners) (Shanker, A 2020), it is excluding tenant farmers who cultivate 30 percent of land in the state.

Rythu Bima: Telangana State, introduced Rythu Bima scheme on 14.8.2018 with an objective to provide financial relief and security to the family members/ dependents of the deceased farmer (Pattadar) in case of his/her death. The farmers Group Life Insurance Scheme (Rythu Bima) ensures financial security and relief to the bereaved members of the farmer's family. The terms for the farmers to be eligible for the scheme: 18-59 years old pattadars and ROFR pattadars are eligible to enrol under this scheme. The Nominee opted by the farmer (Pattadar) at the time of his enrolment in the scheme shall be entitled to get Rs. 5.00 lakhs from the LIC, in case of death of the enrolled farmer, due to any cause. So far, from the beginning of scheme 39894 number of claims are settled and an amount of Rs.1994.7 Crores is transferred to the nominees' @Rs.5.0 Lakhs per farmer.

Groundnut is cultivated in 2.0 lakh hectares across the Telangana region, making it one of its major crops. It is widely grown in Mahbubnagar, Warangal, Nalgonda and Karimnagar districts. In groundnut farming, it is essential to note that crop rotation is vital; this helps to utilize nutrients efficiently and reduces soil-borne diseases. The base

values for the groundnut production in Telangana is 2496.5 (Kg/he) in 2020.

Crops like cotton, chilli, and sugarcane suit the soils for which the Telangana State has to give priority. The area under cotton during 2019-20 (as of 26 September 2019) was 127.67 lakh ha as against 121.05 lakh ha in 2018-19, i.e., 5.46 percent increase in cotton production area compared to the previous year. Among all the states, Maharashtra was reported as leading in cotton acreage (44.05 lakh ha), followed by Gujarat (26.66 lakh ha), Telangana (18.59 lakh ha), Haryana (7.01 lakh ha) and Rajasthan (6.44 lakh ha).

Among the maize growing countries, India ranks 4th in area and 7th in production, representing around 4% of the world maize area and 2% of total production. During 2018-19 in India, the maize area reached 9.2 million ha (DACNET, 2020). Maize is the second-largest crop in the State of Telangana. The production of maize in the state is 2803 MT's. It is being used for consumption and fodder for livestock, i.e., poultry feed, livestock feed, processed food. This is providing employment opportunities in the non-agriculture sector. The maize production is used in other linked industries in Telangana.

After the bifurcation in 2014, Telangana has shown significant improvement in rice production. The paddy is irrigated in 14.198 lakh hectares, and rice production stood at 29.6 lakh tonnes in 2015-16, rose to 51.7 lakh tonnes in 2016-17 and 62.5

lakh tonnes in 2017-18. The state has doubled the production levels in three years and increased the national rice production share from 2.84 percent in 2015-16 to 5.54 percent in 2017-18. The base values for the paddy production in Telangana is 5167 (Kg/ha) in 2020.

The area of sugarcane production in Telangana reduces gradually from 0.39 lakh hectares in 2013-14 to 0.35 lakh hectares in 2017-18. The production of the same is seen as a declined form of 33.76 lakh tonnes to 22.17 lakh tonnes. The base values for the sugarcane production in Telangana is 79,590 (Kg/ha) in 2020.

Horticulture: Horticulture sector has been identified as one of the focus sectors for development of Telangana State. The agro-climatic conditions and varied soils of the state are best suited for growing a wide range of Horticulture crops viz., fruits, vegetables, spices, flowers and plantation crops.

Horticulture crops are grown in an area of 11.57 lakh acres with a production of 63.14 MTs and contributing to 6.2 percent of the total agriculture cultivated area, while in production this sector is contributing 23 percent in volume and 28 percent in terms of value of the produce. The value of Horticulture produce is Rs.17577.00 crores against Rs.55,754.21 crores of total agriculture produce value (2018-19) and contributes 40.5 percent to agriculture GSDP.

Table 2.2 Area and Production of Horticulture Products

Sl. No	Particulars	2014-15		2019-20		% Increase in Area
		Area (in Lakh Acres)	Production (Lakh MTs)	Area (in Lakh Acres)	Production (Lakh MTs)	
1	Fruits	3.77	15.02	4.49	25.37	15.82
2	Vegetables	2.53	13.82	2.73	24.99	6.99
3	Spices	3.03	4.97	3.72	7.93	18.49
4	Plantation	0.19	0.03	0.51	4.29	62.26
5	Flowers	0.07	0.09	0.10	0.51	26.76
	Total	9.59	33.93	11.55	63.09	

Out of the total horticulture area cultivated, fruits constitute more than 50% highest being mango area followed by vegetables and species. The state government encourages the fruits that can be grown in our soils, giving high returns and having international prominence. In mango fruit, varieties like Alfonso and Himayat Pasand are primarily cultivated in Telangana. Other fruits like banana production are encouraged in Telangana State. Telangana ranked 3rd in area and 8th in production of fruits and ranked 1st in turmeric cultivation.

Several schemes by the State and Central governments related to micro-irrigation were initiated to enhance water use efficiency in the agriculture sector by promoting appropriate technological interventions like drip & sprinkler irrigation technologies and encouraging them to use water-saving and conservation technologies.

Telangana Micro Irrigation Project, a unique and comprehensive project, is being implemented in 33 districts. So far, 7.48 lakh farmers covered an area of 7.42 lakh ha by utilizing Rs.3884.94 Crores up to 2018-19.

The micro-irrigation project components in Telangana State include drip irrigation for wide-spaced crops (online), drip irrigation for closed spaced crops (Inline), mini and micro-sprinklers and portable, semi-permanent and rain guns sprinklers. The maximum subsidy given to the farmers in Telangana State is 12.50 acres, i.e., Rs. 5, 61,185/- highest in the country, is a unique subsidy pattern. No other state is giving this much subsidy to farmers. The farmer from each social category will get benefits greater than equal to 80 percent. At least 25% of the financial target allocated to the State must be earmarked to the agriculture crop sector in drip, including Sugar cane, Sericulture etc.

The additional area brought under the micro irrigation is 4224 ha in 2020. It is planned to increase the area to 2.4, 4.0 and 5.0 lakh ha in 2022, 2025 and 2030. The trend in past year for the area brought under micro irrigation depicts, the targets set to achieve are realisable.

Table 2.3 Area Irrigated under Drip and Sprinkler Irrigation Systems

Sl. No	Year	No. of Farmers	Physical (Area in Ha)			Financial (Rs. in crores)
			Drip	Sprinkler	Total	
1	2014 - 15	31277	18541	12052	30593	240.90
2	2015 - 16	39545	31191	8666	39857	322.32
3	2016 - 17	55121	52848	9134	61982	472.30
4	2017 - 18	83458	55715	33711	89426	517.70
5	2018 - 19	37596	28093	12212	40305	247.00
6	2019 - 20	3831	4270	474	4744	28.96
Total		250828	190659	76249	266908	1829.18

The overall additional irrigation potential created for the year is 13.21 lakh acres and it is estimated to create an additional 21.93 lakh acres in 2022 and additional 5.11 in 2030.

Sericulture: Sericulture is one of the most significant sectors of economy. It is an environmentally friendly activity because the silkworm food plants are perennial crops protecting

the soil from erosion. During the year 2020-21, an area of 650 acres was brought under mulberry up to October 2020. A quantity of 9.42 lakh no. of dfls have been brushed to produce 498.24 MTs of cocoons under mulberry sector up to October 2020. Under tasar 1.6118 lakh tasar dfls have been brushed and produced 14.062 lakh number of tasar cocoons up to October 2020, 2nd and 3rd crops are under progress. In the year 2019-20, the

state has allocated an amount of Rs. 99.23 lakh under Schemes.

Telangana State has also initiated schemes like 'Establishment of Green/Polyhouses', a flagship program launched during 2014-15 with a 75% subsidy to promote the cultivation of high-value vegetables and flowers. During 2017-18, another constituent named Flat Roof Net Houses with Cable purlin was also employed to promote vegetable cultivation in the offseason, particularly summer.

Another initiative by the Telangana State towards doubling the farmer's income, vegetable cultivation on pandals which is technological improvement for increasing production and quality of vegetable crops. The weak climbers utilize this support, which protects the produce from soiling and

increases exposure to sunlight and aeration, thereby increasing the number of flower buds, ultimately resulting in more fruit of superior size and quality. The advantages of cultivation of creeper vegetables on pandal system – less water requirement (32000 litres per acre), enhanced quality of produce by reduced pest and disease incidence and minimised labour cost when compared to crop grown on ground.

Around one lakh rupees is the estimated cost for construction of permanent pandal per unit (2000 sq.m). 50 percent assistance on total construction cost of the permanent pandal, with ceiling of Rs.50,000/- per unit and only 5 units per beneficiary. After the formation of new state, there has been nearly 10 times increase in the number of beneficiaries.

Table 2.4 Acreage and Beneficiaries of Vegetable Cultivation Scheme

Sl. No.	Year	Physical (Acres)	Financial (in Lakhs)	Number of Beneficiaries
Before Telangana State Formation				
1	2008-09	208	125	83
2	2009-10	453	271.8	181
3	2010-11	220	96	88
4	2011-12	105	63	42
5	2012-13	60	36	24
6	2013-14	442	265.2	177
	Sub-Total	1488	857	595
After Telangana State Formation				
7	2014-15	1461.57	1460.33	1186
8	2015-16	1014.41	1014.41	406
9	2016-17	829.83	829.70	662
10	2017-18	0.00	0	0
11	2018-19	617	603.75	511
	Sub-Total	3900.51	3885.88	2758
	Total	5388.51	4742.88	5516

The promotion of Vegetable Crop Colonies is centred on growing of specific crops which are in demand for a specific area in cluster approach which are suitable to the soil type, season and climatic conditions. The Telangana state is promoting the

farmers and encouraging to take up staggered sowing which will avoid market glut / shortage so that neither the farmers nor the consumers are put to loss.

Assistance was provided to the farmers for various components viz., Supply of Improved varieties/ high-quality seedlings from COE, Drip Irrigation, Pandals, Mulching & Plastic crates etc., due to which the production from the same area is doubled i.e., from 44,000 MTs to 83,000 MTs.

Telangana State, implemented one crop colony on pilot basis for vegetables at Ibrahimpatnam of Ranga Reddy district covering 3562 acres of 2780 farmers in 38 villages of 3 mandals i.e., Ibrahimpatnam, Manchal & Yacharam. With the success of the pilot crop colony, it is proposed to take up new crop colonies mainly in and around urban agglomerations (Hyderabad, Nizamabad, Warangal, Khammam and Karimnagar).

To make city dwellers to grow their own vegetables afresh with high nutrition and to reduce burden on the local vegetable markets urban farming is promoted since 2012. After formation of the state, the concept & scheme is promoted in a big way.

Urban Farming: This concept has been popularized successfully among the urbanites taking up growing of vegetables on their own. A Kit consisting of Growbags (Silpaulin covers), potting mixture, 12 varieties of Vegetable seeds, Neem Cake, Neem Oil and implements like, Kurphi, etc., are provided on 50% subsidy. Totally 5905 kits worth of Rs. 176.70 Lakhs have been supplied so far.

The Government focuses on developing post-harvest infrastructure facilities like pack houses, cold storages, ripening chambers, etc. to save these perishable crops. In Telangana State, "Horticulture Development Corporation Limited" was established to promote procurement, storage, processing and marketing and availability of good quality food products to the consumers under the brand name '**Kakatiya Foods**'

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. 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 occupancy for consecutive 3 years and is planning to significantly increase capacity²¹.

The Telangana State established the Centre of Excellence, one for Vegetables and Flowers at Jeedimetla, Medchal District in area 12 of 10.35 acres and another for Fruits at Mulugu, Siddipet District in an area of 50 acres. This serve as demonstration cum training center to all the farmers who are cultivating Fruits, Vegetables & Flowers across the state.

There are around 390 Farmer producer Companies in the state promoted by NABARD, SFAC and Others. A majority (84%) are promoted by NABARD. A performance assessment study of 30 NABARD promoted FPCs in the state shows many of them are sustainable in long run and few of them have expanded into value addition in crops like paddy, cotton, chilly, maize and vegetables, and have achieved a higher turnover. FPCs have benefited the farmers in providing inputs at lower cost and by providing assured markets at a better price resulting in enhanced farmers' incomes.

Veterinary and Animal Husbandry: Live Stock rearing plays a vital role in the economy, especially in the State's rural areas. Apart from agriculture, many rural sectors thrive in dairy, rearing sheep, goats and pigs etc. The affluence of agriculture obviously depends upon the livestock population it constitutes. Livestock will help the farmer in agricultural operations and help more in conserving soil health and paving the path for healthy crops and conservation of moisture.

Telangana is blessed with rich livestock resources especially Cattle and Sheep population accounting to 25.67% of Country's population. The State stands 1st in Sheep population, 12th in Goat population,

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3rd in Poultry, 15th in Bovine population and 14th in Pig population and 8th in Livestock population, in the country as per the Livestock Census, 2019 (P).

The Animal Husbandry sector consists of bovine, ovine, pig and poultry populations. The bovine population is further classified into cattle and buffaloes and the ovine population into sheep and goat. In Telangana State, the livestock sector supports about 25.82 lakh families. The value of livestock produce is estimated to be Rs.66, 403 crores at current prices (AE) and the livestock sector contributes 7.6 % to GSDP 2019-20 (AE).

Other schemes like Mass Free Sheep and Goat Deworming program, Foot and Mouth Disease Programme, animal health services such as surgery disease investigations and treatment, online veterinary Hospital Management System, Subsidized fodder supply to farmers are being implemented. The important animal health care services available during the year 2014-15 are Super Specialty Hospital (1), Veterinary Polyclinics (8), Veterinary Hospitals (101), Veterinary Dispensaries (906), Mobile Veterinary Clinics (8) and Rural Livestock Units (1,101) are rendering services in the State.

With an annual output of 1480.55 crore eggs Telangana stands 3rd in egg production in the country. Every eighth egg in the country comes from Telangana. The targeted output for 2022 is

1763.63, 2025 is 2130.05 and 2030 2973.54 crore eggs.

In annual meat production Telangana stands fifth in the country with 8.48 lakh tonnes. The targeted projections for 2022, 2025 and 2030 and 1068, 1357 and 2107 lakh tonnes. Telangana government has initiated scheme likes Distribution Scheme.

Telangana occupies thirteenth position in the country in milk production, annual production of 55.90 lakh Tonnes of Milk. (as per 2019-2020 estimates of Government of India). The production of milk in Telangana State increased, from 42.07 in 2014 to 55.90 lakh Tonnes in 2019-20.

Incentives to Milk Producers of Dairy Co-operatives: The Government of Telangana is implementing Rs.4/- as incentive per liter for the milk procured by Telangana State Dairy Development Corporation Federation Ltd (TSDDCF) with effect from 01.11.2014 to benefit the rural dairy farmers. The scheme is extended to Nalgonda and Ranga Reddy Milk Producers Mutually Aided Cooperative Union Limited, Rangareddy, Karimnagar Milk Producers Company Limited, Karimnagar and Mulukanoor Women's Mutually Aided Milk Producers Cooperative Union Limited, Mulukanoor, Warangal district w.e.f 24.09.2017. Government has released for an amount of Rs. 3773.00 Lakhs during the year 2020-21.

Table 2.5 Production of Milk Eggs, Meat and Wool in Telangana

Sl. No.	Year	Milk (in '000 Tonnes)	Egg (in Lakhs No's)	Meat (in '000 Tonnes)	Wool (in Tonnes)
1	2014-15	4207.26	106185.33	505.05	4422.97
2	2015-16	4442.45	112058.23	542.05	4562.41
3	2016-17	4681.09	118186.35	591.04	4658.11
4	2017-18	4965.37	126700.02	645.03	4506.02
5	2018-19	5416.13	136868.43	754.06	4263.51
6	2019-20	5590.21	148055.17	848.16	3960.14
7	2020-21*	1355.78	34037.36	217.14	-

*(up to Summer 2020)

Considering the geographical conditions, tanks have been the life line of the State. Rainfall pattern in the state and topography has made tank irrigation an ideal type of irrigation by storing and regulating water flow for agricultural use.

To enhance the development of agriculture-based income for small and marginal farmers, accelerating the development of minor irrigation, infrastructure, strengthening community based irrigation management adoption of a comprehensive restoration of tanks in Telangana state under the name of “Mission Kakatiya”. This programme is undertaken is to bridge this gap ayacut of 10 lakh acres in to Command Area Development. It has increased the area under irrigation and also contributed for the increased agriculture production.

Further recharging and sustaining ground water resources would also be a major benefit of this activity. The main objective of Mission Kakatiya is to enhance agriculture-based income for small and marginal farmers by accelerating the development of minor Irrigation infrastructure, strengthening community-based Irrigation management and restoring tanks to their full potential.

The ayacut now being irrigated under minor Irrigation tanks is only about 9-10 lakh acres. Mission Kakatiya aims at bridging the gap ayacut of about 10 lakh acres by adopting following works: (i) de-silting the tank beds to restore the original water storage capacity of tanks, (ii) repairing dilapidated sluices, weirs, etc., (iii) strengthening the tank bunds to its original standards, (iv) repairing the feeder channels to standards for getting water freely into tanks, (v) re-sectioning of Irrigation channels to standards, and (vi) repairing CM & CD works for smooth distribution of water to fields according to their requirement.

Rythu markets were established to facilitate vegetable farmers, one such Rythu Market was set up at Pragnapur under AMC Gajwel, which is specially constructed for Women Farmers for the Karimnagar Highway Commuters. Rythu Market is functioning successfully and has benefited more number of women farmers and commuters.

Target 2.4: *By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.*

Balanced use of fertilizer is essential for maintaining the soil structure and cutting down on excessive chemical fertilizer usage. Soil Health Cards (SHC) are being distributed to farmers to disseminate knowledge on the judicious use of chemical fertilizers in conjunction with organic manures and bio-fertilizers and reduce the cost of cultivation. This is seen as a way to promote Integrated Nutrient Management (INM). The SHC Scheme is under the National Mission for Sustainable Agriculture (NMSA) from 2015-16.

The base value for the issuing of the Soil Health Cards in the state is 2.7 percent of total land holdings for the year 2020. The target set for the 2022, 2025 and 2030 is 20%, 40% and 98% of the total land holdings. State is following a cohesive approach in reaching the targets.

To facilitate soil testing and distribution of soil health cards, the department procured 3 Mobile Soil Testing Vans with erstwhile Medak, Adilabad and Warangal districts as Head-Quarters, 2,050 Mini labs/ Mridaparikshaks for the field staff to distribute SHC at the village level using the mobile soil testing services. In 2016-17, under the Soil Health Card Cycle-1, 10.34 lakh soil samples were collected, and 55.54 lakh cards were issued to farmers. In 2018-19 under cycle-2, 29.60 lakh samples were collected and 43.18 lakh health cards were distributed in Telangana State.

Healthy food is required for a healthy mind and body. The use of chemical fertilizers and chemical pesticides is polluting our food with harmful residues, leading to many diseases. Organic farming is the most viable means of countering the ill effects of chemical cultivation.

In India, organic farming is at an emerging state, only 2.78 million hectares of farmland was under organic cultivation as of March 2020, according to the Union Ministry of Agriculture and Farmers' Welfare. This is two percent of the 140.1 million ha net sown area in the country. Madhya Pradesh tops the list with 0.76 million ha of the area under organic cultivation, over 27 percent of India's total organic cultivation area.

In the state of Telangana, in 2020 the percentage of net sown area under organic farming out of total net sown area is 0.15%. It is planned by the state to increase it to 2%, 5% and 15% for the 2020, 2025 and 2030 respectively. In this regard steps were taken by the state to provide incentives for the organic farming.

The application of the right fertilizer at the right time is crucial to increase productivity and production. In 2018-19, the state had the highest per-acre usage of fertilizers among states. 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 of 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 (Annexure

2.5). 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.

Target 2.5: *By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.*

According to an FAO report, "Coping with Climate Change: Roles of Genetic Resources for Food and Agriculture," 2015. It was suggested that it is necessary and essential to collect and preserve all targeted species' geographic range. It also emphasised that it is essential that the information has to be equitably shared among the concerned. In this regard, a Gene bank is established at ICRISAT ensuring crop improvement and bringing more crop diversity and conservation of Seeds.

Telangana State, keeping this in view has been encouraging the conservation of an indigenous variety of seeds, their usage in production process and consumption. Deccan Development Society (DDS) in Telangana is being encouraged in this regard. Through women sangams, DDS encourages the Organic and chemical-free agricultural production, also using the traditionally preserved seed in the further years of production.

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 fulfils 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 farmers²².

Task force teams to identify spurious seeds have been formed both at state level (6 No.) and District level (33 No.) with Departmental officers along with Police Department officials and officers from TSSDC/TSSOCA and raids are being conducted on Seed Processing Units / Storage units / Godowns / unauthorized premises / transport agencies since March 2020 in all the Districts.

Target 2.a: *Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries*

As part of agricultural extension (extending research from the lab to the field), under the National e-Governance Plan - Agriculture (NeGP-A), various delivery modes have been envisaged. These include internet, touch screen kiosks, agri-clinics, private kiosks, mass media, Common Service Centres, Kisan Call Centres. However, mobile telephony is the most potent and omnipresent tool of agricultural extension service.

Introduction of mKisan SMS portal for farmers enables all Central and State government organizations in agriculture and allied sectors to give information/services/advisories to farmers by SMS in their language, preference of agricultural practices and location. It is seen as the most effective tool to harvest pervasive outreach to nearly 8.93 crore farm families.

The Telangana State has taken steps to assist the farmers in better cultivation practices and put one agriculture extension officer for every 5000 acres. A total of 1526 agriculture extension officers and 120 agriculture officers at a rate of one per mandal are appointed. All the officers were equipped with

Tabs with pre-loaded technical literature on-farm activities, related videos etc, to assist the farmers.

Rythu Vedikas: Telangana State has taken an initiative to construct 2601 Rythu Vedikas in all the Agriculture Extension Officer's clusters with construction cost of Rs.22,00,000/- for each Rythu Vedika with a share from the Department of Agriculture and from MNREGS funds²³

Rythu Vedikas are the first of its kind in India where a platform is being created for the farmers to motivate and stabilize the farmers in attaining the higher returns and making the farmers Rythu Raju. These work sheds will help in mobilising the farmers to organise themselves into groups for attaining their ultimate objective of getting the remunerative prices, better marketing facilities, higher productivity and ultimately making the agriculture profitable. They also facilitate to make farming regulated and remunerative based on the global market intelligence.

It shall be considered and served as platform to (i) to create awareness among the farmers to know about all the farmer's welfare schemes taken up by the Government, subsidies available etc. (ii) can be used as skill imparting centres by the Agriculture and allied departments. (iii) in stabilizing the income of farmers by providing the information on the institution finance and to ensure their continuance in farming. (iv) it can be used as a venue to conduct and organise trainings and awareness campaigns on the latest Agriculture know how by the Agriculture and allied departments.

Professor Jayashankar Telangana State Agricultural University (PJTSAU) established in the year 2014 provides quality education, location specific research and farmer outreach programs to address the needs of the industrious farming community of the State. There are nine constituent Colleges (6 in Agriculture, 2 in Agricultural engineering and Technology and one in Community Science), 11 Polytechnics (9 in Agriculture, one each in

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Seed Technology and Agricultural Engineering), 15 Research Stations including three Regional Agricultural Research Stations, 27 AICRP schemes and 21 Extension Centres spread across the State carrying out the mandated activities in teaching, research and extension.

University interventions in State flagship programmes and lending its support in variety of ways, like providing the technical support to the State in regulating farming, actively provided Integrated Pest Management strategies for Fall Army Worm (FAW) in maize and Pink Boll Worm (PBW) in cotton and reduced indiscriminate use of pesticides. Also, a permanent centre for Agricultural Market Intelligence was established in the Department of Agricultural Economics, College of Agriculture, Rajendranagar under the project “Establishing and Networking of Agricultural Market Intelligence Centres in Telangana” funded by Agricultural Marketing Department, Govt. of Telangana on 20th February 2019. The centre is entrusted with responsibility of developing and dissemination of price forecasts of major crops cultivated in Telangana. Thirty-eight (38) price forecasts of crops grown in both kharif and rabi seasons were developed and disseminated during 2019-20 for the benefit of farmers and all other stakeholders viz., traders, researchers and policy makers.

PJ TSAU has been actively involved in developing soil fertility status maps and fertilizer use guidelines for 33 districts and food consumption pattern of the Telangana State, delineating crop colonies based on soil and weather parameters enabling the State Government to formulate crop planning and judicious fertilizer use policies which also played an important role in formulation of the regulated farming policy implemented during vanakalam and yasangi of 2020-21.

NRM Technologies developed by the university include, rescheduling of N- fertilizer rate in dry seeded paddy, upscaling of productivity of yellow Jowar by nutrient management in rice fallows,

optimization of seed rate under improved sowing method in soybean, evaluation of perennial grass-based cropping systems for year-round supply of fodder for milch animals, mechanization in Red gram cultivation, seed dressing - an effective management strategy to maintain seed health in Soybean

Target 2.b: *Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round*

National Indicator is yet to be evolved. Once it is furnished, state will align with the national indicator.

Target 2.c: *Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility*

To provide the development to the agricultural produce, the agricultural and marketing department formulated a pilot project “Mana Kuragayalu” This project is a developmental initiative to arrange and provide ‘remunerative prices for the growers of vegetables and also provide fresh vegetables to the urban consumers at an affordable price.’ It supports and enhances productivity, arranges post-harvest infrastructure in the rural areas, develops and operates efficient logistics, and provides fresh vegetables to the urban consumers in Hyderabad and Secunderabad the twin cities in the State. The larger and paramount objective is to contain prices and inflation in the state.

It has been modified and adopted from the central government enacted “Scheme for the Development of Agricultural Marketing Infrastructure, Grading and Standardization of each commodity/item, based on the likeliness and acceptance by the consumers’, as per their requirement and satisfaction’.

e-NATIONAL Agriculture Market (e-NAM) - after formation of Telangana State, the department has brought many reforms. Mainly, in tune with the amendment of Telangana Markets Act on 13.04.2016, e-NAM is implementing in 57 AMCs out of 192 AMCs in the State. These are aimed at higher price realization by farmers through the integration of Agriculture Produce Market Committees (APMCs) across the country through a common online market platform to facilitate pan-India trade in agriculture commodities, providing better price discovery through transparent auction process based on the quality of products along with timely online payment. A quantity of 35.84 Lakh MTs was traded on this platform worth Rs.11, 110 crores (Nov 2020). The state is a leader in this platform's roll-out; and is the first to implement the weighment integration and digital payments. The AMC, Nizamabad has been awarded with the Prime Minister's Excellency Award in Civil Services day on 21.04.2017 at New Delhi for getting the first position among all APMCs in the country for successful implementation of e-NAM. ICRISAT and ITDA Utnoor have taken up a combined initiative to enhance livelihoods of small holders belonging to tribal communities in Tiryani, Wankidi and Kerameri mandals in Kumuram Bheem district. The interventions of providing quality pigeon pea seed, processing units for value addition and linking to markets have helped streamlining pigeon pea value chain and increase income of farmers by 86 percent (Selvaraj et al 2017).

2.3 The Way forward

- Welfare measures are in place to cater to food needs of the needy people but a more focused approach is required to address the food security linking all phases of the life cycle. An integrated approach and effective implementation strategy is required to reach the unreachable.
- Underweight, stunting, and wasting among children under 5 years of age; anaemia among pregnant women and children (6-59 months) is more prevalent in the rural and tribal areas.
- Scheduled area (Tribal) mandals of Adilabad, Kumarambheem, Bhadradi Kothagudem, and rural areas of Kamareddy, Nizamabad, Medak, Vikarabad, Warangal (rural), need special attention.
- Indigenous genetic resources are to be protected and varieties suitable to specific agroecological conditions need to be propagated for sustainable agriculture production.
- Providing agriculture inputs, institutional credit, providing soil and crop extension would help farmers to link to agricultural institutions and in turn lead to increased and sustained agricultural production.
- Encouraging the farmers to take up the Organic Farming in areas not yet integrated into mainstream farming practices through suitable incentives and by linking to niche markets.
- Effective utilization of every drop of water through micro-irrigation is imperative for improving crop productivity and production. Achieving sustainable improvement in living standards of small and marginal farmers of State by improving the water use efficiency through micro-irrigation to get assured additional income.
- As area under irrigation has increased many folds due to creation of irrigation facilities, as farmers tend to cultivate paddy, appropriate policy instruments like market signalling, nudging to be used towards crop diversification.
- Extension of appropriate technologies to farmers for high-tech horticulture, including micro-irrigation and mulching, and precision farming.
- Adopt an end-to-end holistic approach covering pre-production, production, post-harvest management, processing and marketing to assure better returns to growers/producers;
- Promote FPOs and their tie-up with Market Aggregators (MAs) and Financial Institutions (FIs) to enhance farmers' returns.

Annexure 2.1 Target Wise State Indicators Along with Base Value and Targets

National Indicator	State Indicator (SIF)	Base Value	Target		
		2020	2022	2025	2030
Target 2.1: By 2030, end hunger and ensure access by all people, particularly the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.					
2.1.1. Underweight Children (Low Weight For Age) Under 5 Years of Age (%)	2.1.1. Underweight Children (Low Weight For Age) Under 5 Years of Age (%)	28.5%	22%	20%	15%
2.1.1. Underweight Children (Low Weight For Age) Under 5 Years of Age (%)	Severe UnderWeight (S.U.W.)/ Severe Acute Malnutrition (S.A.M.)/ Moderate Acute Malnutrition (M.A.M.) Children Gained Weight Under Supervised Feeding (%)	60.0%	65.0%	70.0%	80.0%
2.1.2. Proportion of population (marginalized and vulnerable) with access to food grains at subsidized prices	Population (marginalized and vulnerable) with access to food grains at subsidized prices	280.50			
Target 2.2: By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.					
2.2.1. Stunted Children (Low Height for Age) Under 5 Years of Age (%)	2.2.1. Stunted Children (Low Height for Age) Under 5 Years of Age (%)	28.1%	22.0%	19.0%	16.0%
2.2.2. Wasted Children (Low Weight For Height) Under 5 Years - Severe Acute Malnutrition (S.A.M.), Moderate Acute Malnutrition (M.A.M.) (%)	2.2.2. Wasted Children (Low Weight For Height) Under 5 Years - Severe Acute Malnutrition (S.A.M.), Moderate Acute Malnutrition (M.A.M.) (%)	18.0%	14.0%	12.0%	8.0%
2.2.3. Percentage of women whose Body Mass Index (BMI) is below normal (BMI<18.5 kg/m2)	2.2.3. Percentage of women whose Body Mass Index (BMI) is below normal (BMI<18.5 kg/m2)	23.1%	20.0%	18.0%	16.0%
2.2.4. Percentage of pregnant women age 15-49 years who are anaemic (<11.0g/dl)	2.2.4. Percentage of pregnant women age 15-49 years who are anaemic (<11.0g/dl)	56.7%	47.0%	40.0%	30.0%
2.2.5. Percentage of Children age 6-59 months who are anaemic (<11.0g/dl)	2.2.5. Percentage of Children age 6-59 months who are anaemic (<11.0g/dl)	60.7%	50.0%	40.0%	30.0%
Percentage of children aged 12-23 months fully immunized (BCG, Measles and three doses of Pentavalent vaccine) (HMIS)		98	10	100	100
Target 2.3: By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.					
2.3.1. Productivity - Groundnut - Kharif + Rabi (Kg/ha)	Productivity - Groundnut - Kharif + Rabi (Kg/ha)	2496.5			

National Indicator	State Indicator (SIF)	Base Value	Target		
		2020	2022	2025	2030
2.3.1. Productivity - Maize - Kharif + Rabi (Kg/ha)	2.3.1. Productivity - Maize - Kharif + Rabi (Kg/ha)	4803.5			
2.3.1. Productivity - Paddy - Kharif + Rabi (Kg/ha)	Productivity - Paddy - Kharif + Rabi (Kg/ha)	5167			
2.3.1. Productivity - Sugarcane - Kharif + Rabi (Kg/ha)	Productivity - Sugarcane - Kharif (Kg/ha)	79590			
2.3.2. Gross Value Added in Agriculture per worker	Gross Value Added in Agriculture per worker	66824			
2.3.3. Ratio of institutional credit to agriculture to the agriculture output / % institutional credit extended to the farmers	Ratio of actual institutional credit extended to agriculture to the total agriculture target	51958	75142		
Farmer Producer Organisation (FPO) - Horticulture (No.)	Farmer Producer Organization (FPO)	1	84	180	100
Fresh Water Prawn Production (tonnes)	Fresh Water Prawn Production (tonnes)	10453			
Number of Marketing Committees	Number of Marketing Committees	189			
Number of Primary Agriculture Cooperative Societies (PACSs)	Number of Primary Agriculture Cooperative Societies (PACSs)	799			
Production - Banana (Lakh MT)	Production - Banana (Lakh MT)	0.93			
Production – Mango (Lakh MT)	Production – Mango (Lakh MT)	8.69			
Total Food Grain Production – Kharif + Rabi (Lakh MT)	Total Food Grain Production – Kharif + Rabi (Lakh MT)	92.74			
Production – Paddy – Kharif + Rabi (000 Mts.)	Production – Paddy – Kharif + Rabi (000 Mts.)	1003			
Production – Maize – Kharif + Rabi (000 Mts.)	Production – Maize – Kharif + Rabi (000 Mts.)	2083			
Production – Sugarcane – Kharif + Rabi (000 Mts.)	Production – Sugarcane – Kharif (000 Mts.)	3169			
Production – Groundnut – Kharif + Rabi (000 Mts.)	Production – Groundnut – Kharif + Rabi (000 Mts.)	315			
Production - Chillies (Lakh MT)	Production - Chillies (Lakh MT)	3.69			
Production – Egg (Crore No.)	Egg Production (per capita -	1,48,055	1,76,336	2,13,005	2,97,354
Production – Inland Fish (Tones)	Production – Inland Fish (Tones)	299869			
Production – Meat (MT)	Meat Production Percapita - 0.023 Kg/Per annum)	848	1,068	1,357	2,107
Production – Milk (MT)	Milk Production Percapita - 0.156 Kg/Per annum)	5,590	6,472	7,708	10,315
Tanks Covered Under Mission Kakatiya (No.)	Tanks Covered Under Mission Kakatiya (No.)	44672			

National Indicator	State Indicator (SIF)	Base Value	Target		
		2020	2022	2025	2030
Target 2.4: Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.					
2.4.2. Percentage of farmers issued Soil Health Card	Percentage of farmers issued Soil Health Cards	2.7% total land holdings	20% of total land holdings	40% of total land holdings	98% of total land holdings
2.4.3. Percentage of net area under organic farming	Percentage of net area under organic forming out of total net sown area	0.15%	2%	5%	15%
Additional Area Brought Under Micro Irrigation (ha)	Additional area brought under Micro Irrigation	4224	2,40,000	4,00,000	5,00,000
Additional Area Under Fruits and Plantation Crops (ha)	Additional area under Fruits and Plantation Crops	3509	39,000	65,000	130000
Additional Irrigation Potential Created (Lakh acres)	Additional Irrigation Potential Created (Lakh acres)	13.21 (Since 06.2014 – the formation day of the State)	21.93	5.11	
Area Within 3-8 Metres Range in Groundwater Position as on Date (%)	Shallow Water Table Covering of 44.5% of State geographical Area (July, 2020)	100%			
Area Within 3-8 Metres Range in Groundwater Position Before Monsoon (May) (%)	Shallow Water Table Covering of 30.5% of State geographical Area (July, 2020)	100%			
Cropping Intensity (Ratio)	Cropping Intensity (Ratio) (gross area/net area)	1.24			
Gap Ayacut stabilization under minor irrigation	Gap Ayacut stabilization under minor irrigation	15.05 (Since 06.2014 – the formation day of the State)	1.5		
Net Area Irrigated (Kharif + Rabi) (ha)	Net Area Irrigated (Kharif + Rabi) (ha)	2210004			
New Bore Wells Energised (No.)	New Bore Wells Energised (No.)	60802			
Target 2.c: Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.					
2.c.1. Percentage of Agriculture Mandis enrolled in e-market	Percentage of Agriculture Mandis enrolled e-Markets	30.16			

Source: Planning Department, Government of Telangana, 2020.

Annexure 2.2 State Indicators, Targeted Schemes and Nodal Departments.

Sl. No	State Indicator (SIF)	Targeted Schemes	Nodal Department
1	Underweight Children (Low Weight For Age) Under 5 Years of Age (%)	Balamrutham -ICDS	Women Development and Child Welfare
2	Severe UnderWeight (S.U.W.)/ Severe Acute Malnutrition (S.A.M.)/ Moderate Acute Malnutrition (M.A.M.) Children Gained Weight Under Supervised Feeding (%)	SNP - ICDS	Women Development and Child Welfare
3	Population (marginalized and vulnerable) with access to food grains at subsidized prices	Food Security Cards	Department of Consumer Affairs, Food and civil Supplies
4	Stunted Children (Low Height for Age) Under 5 Years of Age (%)	Double Nutrition, Extra care - ICDS	Women Development and Child Welfare
5	Wasted Children (Low Weight For Height) Under 5 Years - Severe Acute Malnutrition (S.A.M.), Moderate Acute Malnutrition (M.A.M.) (%)	Double Nutrition, Extra care - ICDS	Women Development and Child Welfare
6	Percentage of women whose Body Mass Index (BMI) is below normal (BMI<18.5 kg/m ²)	ICDS	Women Development and Child Welfare
7	Percentage of pregnant women age 15-49 years who are anaemic (<11.0g/dl)	Arogya Laxmi - ICDS	Women Development and Child Welfare
8	Percentage of Children age 6-59 months who are anaemic (<11.0g/dl)	Double Nutrition, Extra care - ICDS	Women Development and Child Welfare
9	Gross Value Added in Agriculture per worker	Rythu Bandhu	Agriculture and co-operation Department
10	Ratio of actual institutional credit extended to agriculture to the total agriculture target	Pavala Vaddi, loans for farming activity	Agriculture and co-operation Department
11	Percentage of farmers issued Soil Health Cards	Soil Health Cards	Agriculture and co-operation Department
12	Percentage of net area under organic farming out of total net sown area	Soil Health Cards	Agriculture and co-operation Department
13	Percentage of Agriculture Mandies enrolled e-Markets	e-Nam	Agriculture and co-operation Department
14	Additional area brought under Micro Irrigation	Micro Irrigation integrated development Programme	Department of Horticulture
15	Additional area under Fruits and Plantation Crops	Micro Irrigation integrated development Programme	Department of Horticulture
16	Additional Irrigation Potential Created (Lakh acres)	Mission Kakatiya	I and CAD department
17	Cropping Intensity (Ratio) (gross area/net area)	Mission Kakatiya, Rythu Bandhu	I and CAD department
18	Farmer Producer Organization (FPO)	Small Farmers' Agri-Business Consortium	Agriculture and co-operation Department
19	Fresh Water Prawn Production (tonnes)	Integrated fisheries Development Scheme	Fisheries Department
20	Net Area Irrigated (Kharif + Rabi) (ha)	Mission Kakatiya, Irrigation Projects	I and CAD department
21	New Bore Wells Energised (No.)	24*7 power supply to agriculture	Energy Department

Sl. No	State Indicator (SIF)	Targeted Schemes	Nodal Department
22	Number of Marketing Committees	Argriculture marekting	Agriculture marketing department
23	Number of Primary Agriculture Cooperative Societies (PACSs)	Argriculture marekting	Agriculture marketing department
24	Production - Banana (Lakh MT)	Rythu Bandhu, related agrcicultural Incentives	Agriculture and co-operation Department
25	Production - Chillies (Lakh MT)	Rythu Bandhu, related agrcicultural Incentives	Agriculture and co-operation Department
26	Production - Cotton - (000 Bales)	Rythu Bandhu, related agrcicultural Incentives	Agriculture and co-operation Department
28	Production - Groundnut - (000 Mts.)	Rythu Bandhu, related agrcicultural Incentives	Agriculture and co-operation Department
30	Production - Inland Fish (Tones)	related agrcicultural allied activities Incentives	Department of Animal Husbandry, Dairy Development and Fisheries
31	Production - Maize - Kharif (000 Mts.)	Rythu Bandhu, related agrcicultural Incentives	Agriculture and co-operation Department
33	Production - Mango (Lakh MT)	Rythu Bandhu, related agrcicultural Incentives	Agriculture and co-operation Department
34	Meat Production	Sheep Disribution Scheme	Department of Animal Husbandry, Dairy Development and Fisheries
35	Milk Production	MILCH animal distribution Scheme	Department of Animal Husbandry, Dairy Development and Fisheries
36	Production - Paddy - (000 Mts.)	Rythu Bandhu, related agrcicultural Incentives	Agriculture and co-operation Department
38	Production - Sugarcane - (000 Mts.)	Rythu Bandhu, related agrcicultural Incentives	Agriculture and co-operation Department
39	Tanks Covered Under Mission Kakatiya (No.)	Mission Kakatiya	I and CAD department
40	Total Food Grain Production - Kharif (Lakh MT)	Rythu Bandhu, related agrcicultural Incentives	Agriculture and co-operation Department

Source: Annual Reports of Telangana State Governments Departments.

Annexure 2.3 Number and Area of Operational Holdings Class Wise in Telangana 2015-16

Size Class Group	Area (in '000 ha.)	Percentage	Number (in '000)	Percentage
Marginal Size	1706	28.56	3840	64.56
Small Size	1977	33.10	1409	23.69
Semi-medium Size	1467	24.56	564	9.48
Medium Size	688	11.52	126	2.12
Large Size	135	2.26	9	0.15
All Size Classes	5973	100	5948	100

Source: Agricultural Census, 2015-16.

Annexure 2.4 Details of Rythu Bandhu Scheme in Number and Amount

Sl. No	Season & Year	Pattadars Number in Lakhs	Amount In Crores
1	Vanakalam 2018	50.25	5236.3
2	Yasangi 2018-19	49.13	5251.89
Year 2018-19			10488.19
3	Vanakalam 2019	51.61	6125.54
4	Yasangi 2019-20	42.42	4406.48
Year 2019-20			10532.02
5	Vanakalam 2020	58.01	7287.81
Grand Total			28308.02

Source: Telangana State Planning Department, 2020.

Annexure 2.5 Consumption Details of Various Fertilizers in Telangana (in mts)

Sl. No	District	Urea	DAP	NPKS	MOP	SSP	Total
1	Adilabad	59426	13757	47636	6808	3197	130822
2	Bhadradi	48139	8765	58851	10371	5102	131227
3	Jagitial	49342	2828	20890	2165	506	75731
4	Jangoan	24891	3670	20061	3235	344	52200
5	Jayashankar	38369	4309	20858	3817	879	68232
6	Jogulamba	50833	5005	57397	3489	1492	118217
7	Kamareddy	75112	2870	33241	5263	1052	117539
8	Karimnagar	112942	16194	72107	16990	2395	220628
9	Khammam	82148	18882	86684	14028	5729	207470
10	Kumaram Bheem Asifabad	25316	7438	19122	1943	1459	55279
11	Mahabubabad	36680	1741	14871	2268	328	55888
12	Mahbubnagar	57761	17290	41204	4378	2179	122812
13	Mancherial	21681	8668	36951	5131	1054	73485
14	Medak	40344	7139	63967	9570	1728	122748
15	Medchal	15179	1269	3903	1006	382	21739
16	Mulug	19548	3057	11599	2545	200	36949
17	Nagarkurnool	57847	2526	8529	807	356	70066
18	Nalgonda	77639	14432	115555	14120	3172	224919
19	Narayanpet	50370	3000	33711	2619	400	90100
20	Nirmal	27341	2573	18611	1287	329	50141
21	Nizamabad	145953	11176	93517	8079	3049	261775
22	Peddapalli	54123	5887	30496	5980	622	97108
23	Rajanna	28162	1036	20476	1708	146	51528
24	Rangareddy	39466	10954	31745	1908	614	84688
25	Sangareddy	26316	8017	20613	4328	1193	60466

Sl. No	District	Urea	DAP	NPKS	MOP	SSP	Total
26	Siddipet	36043	1769	23324	2943	284	64364
27	Suryapet	93434	8784	63582	5941	1137	172878
28	Vikarabad	25332	13812	15745	4159	335	59384
29	Wanaparthy	29250	4729	24820	3722	1138	63658
30	Warangal Rural	50047	2321	13642	2928	499	69437
31	Warangal Urban	80916	13286	73576	14230	2987	184995
32	Yadadri	30684	4341	19296	3647	560	58528
	Total	1610633	231525	1216580	171414	44848	3275000

Source: Planning Department, GoT.

Sustainable Development Goal - 3

Good Health and Well-Being for All



Vision

Developing a Healthy Telangana while ensuring good health and well-being for all citizens of all ages, through a preventive, promotive, curative, palliative and rehabilitative health care strategy, and to achieve universal access to quality healthcare services for all citizens by providing free and / or affordable medicine and diagnostics.

To ensure availability of quality healthcare services on equitable, assessable, and affordable basis across the state with special focus on under-served population and marginalized groups; to establish comprehensive primary healthcare delivery system and well-functioning linkages with secondary and tertiary healthcare delivery system; to develop training capacity for providing human resources for health; and to regulate health service delivery and promote rational use of drugs/medicine.

Schemes and Programmes

State Government - Arogyasri (health protection), EMS (emergency healthcare and transport), Amma Odi, Arogyalaxmi, Balamrutham, Kanti Velugu, Harithaharam, Mission Bhagirath, Genome Valley, Pharma City; Central Government - National Health Mission, ICDS and Poshan Abhiyan, Swacha Bharat, Swasthya Bharat, RNTCP.

Achievements

Maternal and Child Health - Maternal Mortality Rate (MMR) is already below the SDG-3 target for 2030, Child Mortality rates - one of the lowest in India; nearing to universalization of anti-natal care and post-natal care, institutional deliveries, child immunization; Life-Sciences Research and Pharma Industry – Genome Valley and Pharma City; Universal Health Coverage – Arogyasri and emergency medical services (EMS).

Challenges

Malnutrition among women and children; triple burden of disease – re-emergence of existing communicable diseases along with newly emerging ones and the epidemiological transition to costly non-communicable diseases (NCDs); high morbidity and mortality due to NCDs, primary healthcare services, human resources in healthcare, increasing cost of healthcare with growing private healthcare services – affordability; access to generic medicine and affordability of non-generic medicine; drug peddling, pollution control.

3.1 The Context

Right to Health-Leading a healthy life and living longer is everyone's right. It has both the intrinsic value and instrumental role in the development perspectives. *Good health* is considered as *essential for sustainable development and is important to building prosperous societies*. State policy and healthcare interventions is critical in this respect to prevent premature deaths and eradicate preventable causes of deaths and diseases through public healthcare system and to ensure access to affordable and quality-healthcare services. Though significant progress world over has been made in improving the health of millions of people, still millions of people are deprived of desired health outcomes. While ensuring healthy lives for all, the benefits in fact exceed costs of achieving it. But it requires a strong political and financial commitment of the state.

3.2 SDG-3 Targets

Therefore, health aspects of development become an important underlying thread of different Millennium Development Goals (MDGs) of

United Nations (UN), some of the goals were directly related to health: MDG-1 (poverty and hunger), MDG-4 (child mortality), MDG-5 (maternal health) and MDG-6 (communicable disease). In continuum with MDGs agenda for 2015, the superseding Sustainable Development

Goals (SDGs) have set the action agenda for 2030. The third Sustainable Development Goal (SDG-3) is about Good Health and Well-Being, and it has nine Targets and four Means of implementation. Following are the dimensions of targets and their benchmarks which are set at global levels, but they are applicable at local levels as well.

Table 3.1 SDG-3 – Good Health and Well-Being Target Dimension Benchmarks of Each Target by 2030

Goal	Target	Target Dimension	Benchmarks of each Target by 2030
SDG-3: Good Health and Well-Being	3.1	Reducing Maternal Mortality Reducing	Reduce MMR to less than 70 per lakh live births
	3.2	Child Mortality	End preventable deaths of newborn to 12 and children below 5 years of age to 25 per 1000 live births
	3.3	Ending the Epidemics	End epidemics of AIDS, TB, and communicable diseases
	3.4	Reducing Mortality due to Non-Communicable Diseases	Reduce by 1/3 premature mortality from non-communicable disease
	3.5	Prevention and Treatment of Substance Abuse	Strengthen the prevention and treatment of substance abuse including drugs and alcohol
	3.6	Deaths and Injuries due to Road Accidents	Halve the number of deaths and injuries due to road traffic accidents
	3.7	Access to Sexual and Reproductive Healthcare Services	Ensure universal access to sexual and reproductive healthcare services
	3.8	Universal Health Coverage Reduce Deaths and Illness due to Hazardous Chemicals	Achieve universal health coverage
	3.9	Implementation of WHO Framework Convention on Tobacco Control Support R&D of Vaccine and Medicine	Substantially reduce the Number of deaths and illness from hazardous chemicals
	3.A	Increase Health Financing and Workforce	Strengthen the implementation of WHO's Framework Convention on Tobacco Control
	3.B	Increase Capacity for Management of Health Risks	Support research and development of Vaccine and Medicine
	3.C		Substantially increase health financing and health workforce
	3.D		Strengthen capacity for early warning, risk reduction and management of national and global health risks.

Source: UNDP.

In this respect the government of Telangana, is strongly committed to achieve the goal of *good health and wellbeing* in alignment with its commitment to all the SDGs while complying with the global framework. Through an effective and ideal healthcare model the government of Telangana is driven by developing a *Healthy Telangana while ensuring healthy lives and promoting well-being for all at all ages* in the state.

Healthcare Status in Telangana: Achievements, Strengths, and Challenges

According to NITI Ayog's report, **SDG India: Index and Dashboard 2019-20**, the performance of the Telangana state is placed it in the league of front running states in India in respect of SDG-3 with a score of 67 while the national average is 61. Achievement of the state in preventing and controlling the Covid-19 pandemic and treating the infected cases is remarkable. Due to floating population the number cases and test per lakh

population is above the national average. But the infection rate in tests and the case fatality rate among the infected is one of the lowest. Telangana has emerged as a hub of Covid-19 vaccine manufacturing.

As is the case of SDG-3 overall score, the performance of Telangana state is better than national average and many other states in respect of some of the indicators related to health. For instance, the maternal mortality ratio (MMR) in the state (63) is well below the national average (120) and it has already achieved the target of SDG-3 (70). The infant mortality rate (IMR) of Telangana state at 28 in 2018 is well below the national average (32). Similarly, the state performance in respect of institutional births and vaccination of children stands above the national average. However, there is a scope for improvement and to achieve desired level of health outcomes.

The government of Telangana intends to realize its vision of 'Healthy Telangana', has initiated and is implementing several policy measures including its flagship programmes such as Arogyasri, KCR Kit, Amma Odi, Arogya Lakshmi, Kanti Velugu and others, along with implementing national programmes like National Health Mission (NHM), Revised National Tuberculosis Control Programme and Poshan Abhiyan, to improve health and well-being of people in the state. To provide quality healthcare to poor, the government of Telangana is implementing Arogyasri (Healthcare protection) scheme as a flagship scheme in the state. There are around thirty lakh out-patients and around twenty lakh in-patients treated while conducting around twenty lakh surgeries and therapies²⁴ under the scheme since the state formation in June 2014.

Telangana has emergency response system in delivering comprehensive, speedy, and reliable quality emergency healthcare services under Emergency Medical/ Management Services (EMS) through single toll-free number (108). It dispatches ambulances with well-trained emergency medical

technician to render quality pre-hospital care and transport the patient to the appropriate healthcare facility. There is a platoon 300 plus such ambulances in the state for the purpose.

As regards the health infrastructure under the public healthcare system, Telangana state consists of 152 general hospitals and/or community health centres (CHC), 22 hospitals for special treatment, 49 panel clinics, 885 primary health centres (PHCs), 10 hospitals under AYUSH, 74 dispensaries, 110 urban health centres (UHC or Basthi Dawakhana), and 4797 sub-centre (SHCs). Doctors available in public healthcare facilities are around 5637 (5132- regular; 506 – contract). Around 23067 beds are available in these facilities in the state. Along with these, there are number of private healthcare facilities ranging from clinics to super specialty and corporate hospitals in the state of Telangana which made the state a destination for health tourism.

At the grassroots levels along with Anganwadi workers, the Accredited Social Health Activists (ASHA) under National Health Mission (NHM) and Auxiliary Nurse Midwives (ANMs) are functional in interfacing between the community and the public health system. There are more than 35000 Anganwadi workers, 27000 ASHA Workers and 500 ANMs working in the state for the purpose. Along with mobilizing the community, they create awareness of the health among the community and educate them. They also facilitate access to health care along with conducting regular health check-ups, reporting births and deaths, and providing supplementary nutrition.

In all, Telangana has a lateral advantage of reduction in maternal mortality rate and the child mortality rates. The achievement of the state in respect of maternal and child health and enabling factors in this regard, such as anti-natal care, institutional delivery, is remarkable. Continuation of the existing schemes/programme and measures for the purpose will enable achieving further sustainable

24 See at : <https://www.aarogyasri.telangana.gov.in/web/tgasri/data-tables>, accessed on 18/01/2021, at 10.30 am.

progress. One of the challenges in healthcare is disease burden (mortality and morbidity) due to communicable and non-communicable diseases. Government of Telangana has already initiated preventive measures controlling the communicable disease along with facilitating the access to and affordability of treatment in respect of non-communicable diseases (Arogyasri and EMS). State government is also promoting and facilitating the innovative models of healthcare, research, and pharmaceutical industry in the state.

Reducing Maternal Mortality

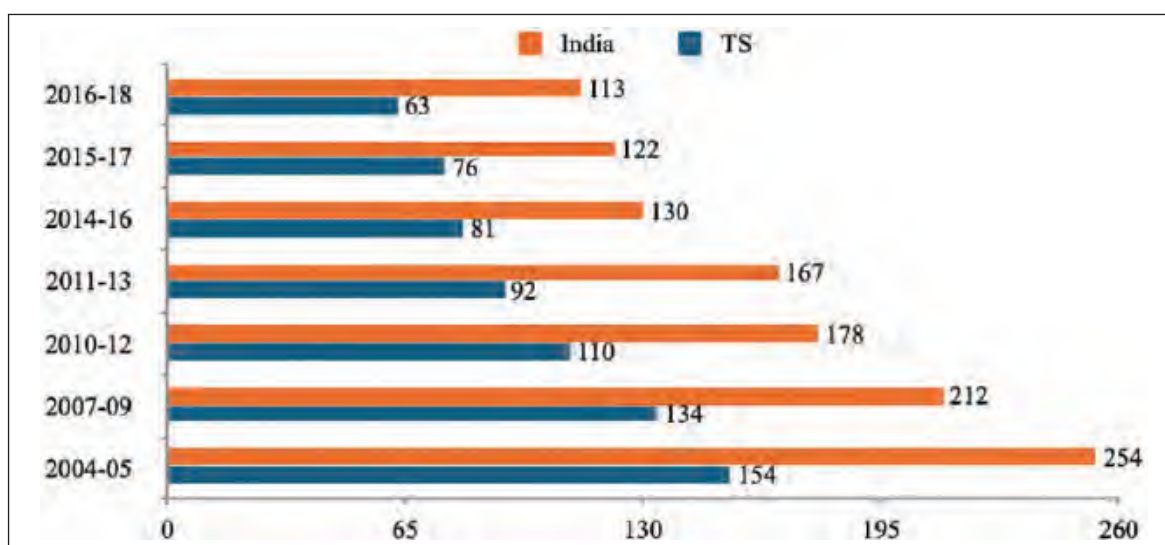
The goal of the Target 3.1 is to reduce the maternal mortality ratio (MMR) to less than 70 per lakh live births by 2030.

The maternal mortality ratio (MMR) in the state of Telangana is at present lower than the target of SDG-3 for the year 2030. However, further reduction in MMR is a desired health outcome.

Besides, state is also striving to reduce regional disparities across districts along with rural-urban differences. Based on the past performance of the state, one can expect that further achievement of the state would be that the MMR will be down to 25 by 2030 (based on business-as-usual projection).

One of the factors in maternal mortality is child births not attended by skilled health personnel or non-institutional deliveries. One of the reasons why Telangana performance is relatively better could be because of the fact that institutional deliveries or childbirth attended by skilled personnel are comparatively higher. According to the fourth National Family Health Survey (NFHS-5) in 2019-20, nearly 97.0 per cent of total child births in the state were taken place in institutional settings. The state is short of 3 percent to be child births to be attended by skilled healthcare professionals/personnel. The Government of Telangana is committed and aiming at 100 per cent institutional births by 2026.

Figure 3.1a: Maternal Mortality Rate (MMR) in Telangana



Note: Up to the year 2011-13 the state estimate is combined figure for united Andhra Pradesh, thereafter it is separate estimate for Telangana State.

Source: SRS.

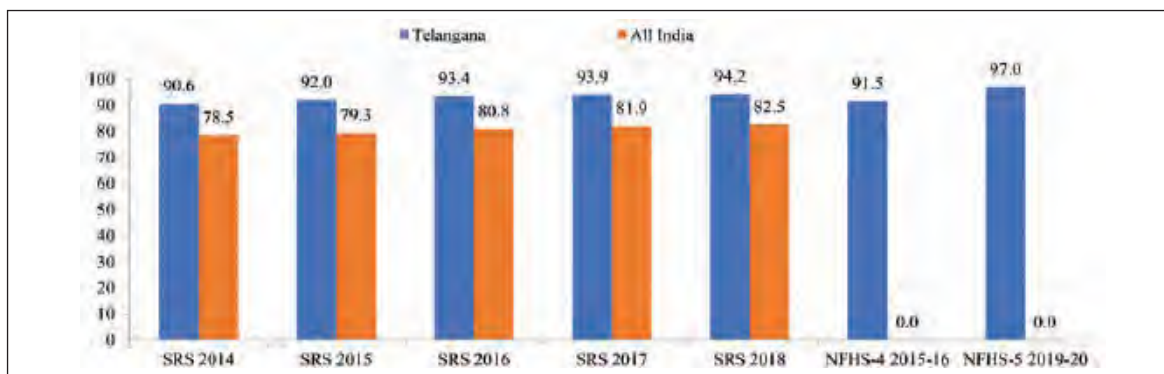
Further, antenatal care (ANC) and TT injections also influence the health of mother and child during the pregnancy as well as their post-natal health conditions. According to NFHS-5

(2019-20), although 88.5 per cent of mothers had ANC at their first trimester, less than three-quarter (70%) of the mothers in fact had crucial four visits for ANC. The district with the highest

proportion of women in this category is Ranga Reddy (95.5%) whereas Vikarabad which had the lowest percentage (78.0%), is also encouraging. With regards to frequency of visits, the proportion of pregnant women who had at least 4 antenatal

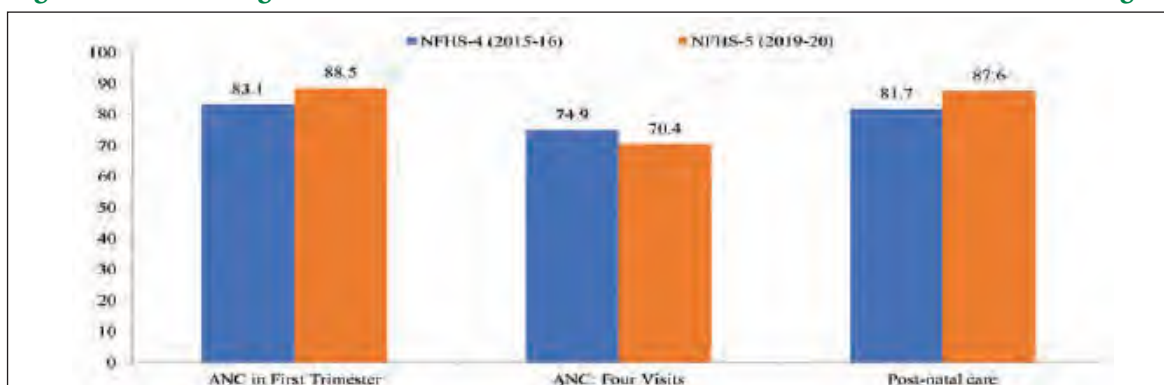
care visits in Telangana stood at 70.4 per cent. The district with the highest proportion of women in this category is Jagtial (81.9%) whereas Vikarabad had the lowest percentage (54.8%).

Figure 3.1b: Institutional Deliveries in Telangana: Percent of Total Child Births



Source: SRS and NFHS.

Figure 3.1c: % of Pregnant Women who had ANC and Post-Natal Care after Child Birth: Telangana



Source: SRS and NFHS.

In this respect, the government of Telangana is committed to ensure that by 2026 all the pregnant women receive at least four ANC's and to ensure that all the pregnant women get TT injection. Tetanus (neonatal tetanus) is particularly common and serious among the newborn babies. The incidence is high in deliveries that are conducted without adequate sterile procedures. According to NFHS-5 (2019-20), around 90 per cent of pregnant women in the state had tetanus (TT) injections (an increase of 1 per cent from NFHS-4), it is so both in rural and urban areas. It means child births of these mothers are protected against neo natal tetanus.

This result is seen across all the districts of the state. The district with the highest proportion of women in this category is Khammam (97.3%) and the lowest is in Nizamabad district (80.0%).

Along with ANC including TT, post-natal care is also critical for the women health after the childbirth. Postnatal period is very crucial for mothers as well as newborn babies. The mothers are under enormous stress given the breast feeding; and they require information on proper nutrition for both themselves and the children as well as on immunization. Hence the ex-ante services related to the postnatal care is extremely important to reduce maternal and infant deaths. The care includes

counselling on these aspects and an interactive session on the importance of birth spacing and maternal nutrition, and so on. According to NFHS-5, nearly 88 per cent of women in the state have received post-natal care from skilled health personnel within 2 days of delivery (an increase of 5.9 per cent from NFHS-4). The district with the highest proportion of women in this category is Warangal Rural (93.8%) whereas Siddipet had the lowest percentage (74.1%). The grassroots level functionaries such as Anganwadi workers, ASHAs and ANMs are conducting and facilitating health check-up, access to healthcare and nutritional supplementation including micro-nutrients.

The government of Telangana is implementing KCR Kit and Amma Odi Programmes which have helped increase in institutional deliveries and reduce the maternal mortality ratio in the State. 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, mother receives a kit containing 15 utility items. Additionally, a wage compensation of Rs.12,000 (Rs.13,000 in case of female child) is paid to mothers in four tranches. There is a significant increase in institutional deliveries in public facilities after initiation of the programme. The '102 Referral Transport Service' (Amma Odi) is an important programme to ensure the safety and wellbeing of pregnant women and neonatal children. The objectives of the programme are 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 which is a part of Janani Shishu Suraksha Karyakram (JSSK) of National Health Mission (NHM). With these interventions all the pregnant women are tracked and their child birth deliveries are planned.

To provide quality services, so that the pregnant women can *deliver with dignity*, the Maternal and Child Health (MCH) infrastructure is being strengthened with 100-bedded MCH blocks being planned in all districts. At present fourteen 150 bedded MCH blocks are operational, and the Government is planning to have these MCH blocks in all districts attached to the district hospitals in the coming years. All labour rooms are being standardized by making necessary repairs and ensuring required infrastructure and equipment.

To improve the nutritional status of pregnant and lactating women **Arogya Laxmi** Programme is being implemented in the state since its formation. It involves spot feeding of "one full meal" every day to each of the pregnant and lactating women at the nearest Anganwadi centre along with administration of Iron & Folic Acid (IFA) tablet.

Reducing Child Mortality

The goal of the Target 3.2 is to by 2030 end preventable deaths of new-borns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.

There are many children across the globe dying within short time after the birth or within a week/month (neo-natal mortality), many more within a year (infant mortality), some more children dying before reaching five years of age (under-five mortality). Child mortality is cause of healthcare concerns across the globe especially in the developing countries like India.

Figure 3.2a: Infant Mortality Rate (IMR) in Telangana State, 2000-2018 - SRS

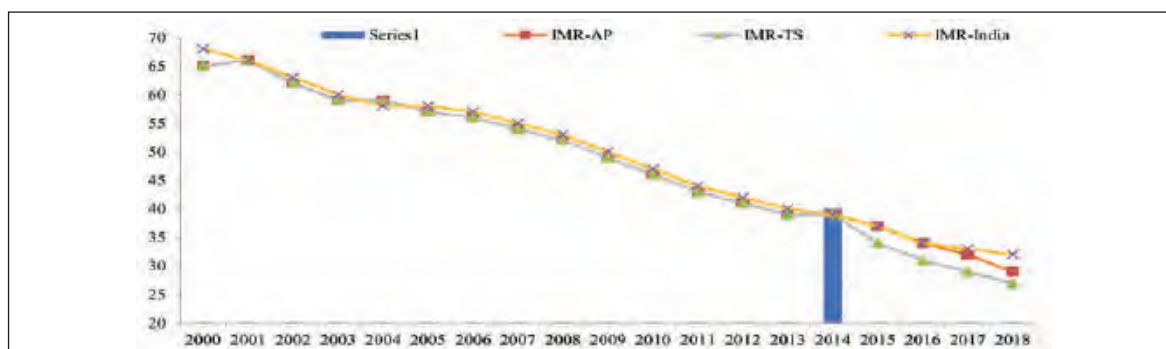
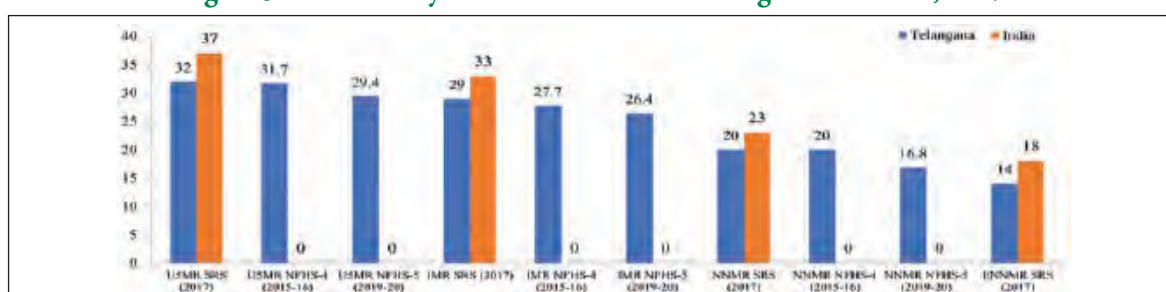


Figure 3.2b: Mortality Rates of Children in Telangana and India, 2017



Notes: 1. ENNMR – Early Neo-Natal Mortality Rate; NNMR - Neo-Natal Mortality Rate; IMR – Infant Mortality Rate; U5MR – Under-five Mortality Rate (or Child Mortality Rate). 2. IMR till 2014 represents combined Andhra Pradesh (AP), thereafter separately for residual AP and Telangana (TS)

Source: SRS and NFHS

The state is performing well in reducing child mortality rates when compared to the national average and many other states in India. According to the latest estimates of the Sample Registration System (SRS), the infant mortality rate (IMR) in Telangana was 27 for the year 2018 while the national average is 32. Under-five mortality rate (U5MR) in the state was 32 for the year 2017 and the national average was 37. The latest NFHS-5 (2019-20) estimate shows it is 29 for Telangana. As the SRS estimates shows more than 90 per cent of under-five mortality is accounted by infant mortality. Again, early neonatal mortality i.e. children died within week of their birth, accounts for 50 per cent of the infant mortality rate (IMR) whereas the neonatal mortality i.e. children died within a month of the birth, forms around 70 per cent of IMR. It indicates the neonatal mortality especially the early neo-natal mortality is a cause of concern. Ensuing survival of children beyond a week of their birth and beyond a month saves many lives of children from death.

The government of Telangana aimed at reducing child mortality rate, including neo-natal and infant mortality rate, to its lowest level during the next decade. The state government intervention programmes are striving to achieve 100 per cent coverage for ANC of pregnant women and institutional births along with eliminating malnutrition, which is one of the major factors of child mortality. **Amma Odi** is to encourage institutional delivery for safe child birth. Mothers are provided with a **KCR Kit** that consists of 15 items (including clothes, quality baby soaps, baby oil, baby powder, mosquito nets, toys, napkins, diapers etc). They are meant to keep newborn babies (neonates) warm and hygienic, and the items are sufficient for three months and meant to reduce the neo-natal mortality. The “Telangana Newborn Action Plan” has been launched with the aim to reduce the Infant and Neonatal Mortality Rate. Currently there are 29 **Special Newborn Care Units (SNCU)** for saving lives of infants and providing exemplary service. The state Government

is planning to establish at least one SNCU in every district.

For improvement of nutritional conditions of children, a scheme of **Balamrutham** is being implemented in the state. It is a weaning food provided to children between 7 months and 3 years of age as a part of ICDS's improved supplementary nutrition programme to children. Along with institutional child births, immunization or vaccination against fatal childhood diseases is also critical for the survival of children. The baseline (2020) value for the Telangana state is 98% and it will achieve 100% coverage within a short-span of time.

Ending Epidemics

The goal of the Target 3.3 is: by 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases.

The infectious diseases continue to pose threat to the society. Although devastating epidemic nature of some of the communicable disease like cholera and plague is combated and controlled, some of the communicable diseases continue to persist and some new ones have emerged and are emerging. Diseases like Tuberculosis, Malaria continue to rise despite tremendous efforts to control them. Re-emergence of dengue and malaria cases is severely challenging the public health. Ending epidemics of communicable diseases are critical for achieving the sustainable development goal of good health and well-being. Crucial factors in this regard are disease surveillance system in place and action of public health systems.

The proportion of disease burden in the state due to premature death is 61.6% and due to disability or morbidity is 38.4%. As reported by National AIDS Control Organisation (NACO), Telangana state has 78775 cases of people living with HIV/AIDS in 2018 and they are currently alive and

under-going anti-retroviral treatment (ART) in 22 centres of ART. Of the total of 4.75 lakh general clients tested in 2018, 7561 clients (comprising 1.59%) were detected sero-positive for HIV. The HIV prevalence rate among pregnant women in the state, as cases reported in 32 ANC clinic attendees, is 0.28 in 2016-17. It is far lower than that of previous year at 0.39. Telangana state is standing little above the national average in this regard. The Telangana State AIDS Control Society (TSACS) is taking measures to reduce incidence of HIV cases while educating the general population and increasing awareness through its awareness campaigns and education programmes.

As reported by Revised National Tuberculosis Control Programme (RNTCP), Ministry of Health and Family Welfare (MHFW), Government of India, Telangana state consists of around half a lakh patients registered in 2018 for tuberculosis treatment. As compiled from different disease control programmes under DGHS and reported in National Health Profile 2019, although there was no deaths but there were around 1800 cases of malaria, 4600 of dengue and 2000 cases²⁵ of chikungunya reported in the Telangana state in 2018.

The government of Telangana state is committed to minimize and eliminate most of these communicable diseases through specific measures targeting to eradicate or minimize the diseases. While implementing Comprehensive Vector Borne Disease Control programme, the state also has initiated 'Mosquito Surveillance' system using technology to control mosquito borne diseases (like dengue, malaria, chikungunya, Zika, and Japanese encephalitis). Indoor Residual Spray (IRS) is being done which is one of the most important activities to control diseases like malaria, chikungunya and dengue.

By controlling the mosquitoes, diseases like malaria, dengue, chikungunya etc., can be controlled

25 Compiled from Directorate of National Vector Borne Disease Control Programme, NCDC, DGHS, MoHFW, Govt. of India.

effectively. Since 2014, the state has contributed to only 0.39 percent of malaria deaths in the country. With effective vector control measures, the state aims to reduce the incidence and prevalence of Malaria and other vector borne diseases. Measures like effective surveillance, community engagement and health education are being taken along with the establishment of mobile malaria clinics in high transmission areas which will result in prompt and effective treatment and reduction in the parasite reservoir and the possibility of further transmission.

As part of the Revised National TB Control Programme (RNTCP), the “End TB Strategy” is to make the state TB-Free with zero deaths, disease, and poverty due to TB. From September 2017, the State had to take up daily regimen for all TB patients. Active Case Finding is taken up in 31 identified SLUM areas. All 31 districts have been provided with CBNAAT machines. Provision of double ration to all the TB patients of below 6 years has been envisaged. With sustained efforts the Government aims to reduce TB by 2025.

Combating emerging Pandemic threats is another critical area of the public health systems across the globe. Risks posed by pandemic threats such as deadly strains of flu, Ebola, Zika etc have increased in the recent past. Dense urban living, coupled with modern travel, will accelerate future infectious disease outbreaks. Another big danger is the emergence of drug resistance to bacteria. The state government has recognised the threat and has plans to prepare to it before any of these epidemic/ pandemic emerge. The apex laboratory in the state ***Institute of Preventive Medicine*** will be strengthened. Regional laboratories will be developed in other parts of the state, as early diagnosis is crucial to combat these threats. Healthcare systems will be improved, and awareness will be created among the population. The state has effectively controlled outbreaks such as swine flu in the past. The state aims to be prepared for the challenges in the future in coordination with all the

stakeholders. The ***Genome Valley*** cluster of the state that facilitated by the state government emerged as preferred destination for major companies that focused on Research and Development (R&D) in life sciences. It is emerging as a destination for biologics manufacturing and as a hub for clinical development of vaccines, bio-similars and biologics. Telangana will have advantage of making use of advancement in life sciences through R&D in Genome Valley in health sector.

Reduce Mortality from Non-Communicable Disease

The goal of the Target 3.4 is to by 2030 reduce by one third premature mortality from non- communicable diseases through prevention and treatment and promote mental health and well-being.

The burden of disease owing to non-communicable diseases is increasing in the state as it is the case across country. The Global Burden of Diseases Study (GBDS) observes that there is an epidemiological transition from communicable diseases to non-communicable diseases across the globe. The GBDS is an observational epidemiological study of risks to health and life owing to diseases, injuries and other risk factors that includes diet related ones, tobacco use and blood pressure related ones. These studies have shown that changing life-styles to sedentary nature along with unhealthy diets are risk factors causing one in five deaths at the global level. A GBDS in India²⁶ have identified leading causes of death in the country as follows: heart disease, chronic obstructive pulmonary disease, diarrhoea, stroke, lower respiratory infections, tuberculosis, neo-natal pre-term births, self-harm, road accident injuries and other neonatal conditions.

The estimates in ***India-Health of the Nation's states*** report also show the burden due to non-communicable diseases and injuries has overtaken the burden due to infectious and maternal- child diseases. It is observed that Ischaemic Heart disease

26 The study was conducted by Public Health Foundation of India (PHFI) and the Institute of Health Metrics and Evaluation (IHME) of Washington University.

is the major contributor to the disease burden. As it is estimated in the report the proportion of total

disease burden in 2016 in Telangana state is as follows:

Table 3.4a: Proportion of Disease Burden in Telangana Accounted by three Critical Disease Types, 2016

Disease	Proportion of disease burden
Communicable, maternal, neonatal, and nutritional diseases	27.6%
Non-Communicable Diseases	59.2%
Injuries	13.2%

Source: India-Health of the Nation's states

As Registrar General of India (RGI) has reported in its recent report on Medical Certification of Cause of Death (MCCD) for the year 2018, there were around 14.6 lakh medically certified (cause of) deaths in India. These medically certified deaths formed around one-fifths (21%) of the total deaths registered across states in the country. Eight leading causes of deaths accounted for 86.5% of total medically certified cause of deaths in India. The leading cause that accounted for one-thirds (32.9%) of such total deaths is **diseases of circulatory system**. These Diseases of Circulatory System include Ischemic-Heart-Diseases (IHD), diseases of Pulmonary Circulation and other forms of heart diseases. Further, around 6 per cent deaths in the country are associated with neoplasms related disease (i.e. cancer).

According to RGI's MCCD Report 2018 there were 1.36 lakh deaths registered in Telangana state. Among these, half-a-lakh deaths were medically certified deaths comprising 37.4% of the registered deaths in Telangana. The diseases of circulatory system have caused more than half (51.9%) of total medically certified deaths in the state. Telangana stands top among the major states in India in this regard. Also, there were 1596 deaths comprising three per cent of medically certified deaths in the state were due to neoplasms (cancer). Cancer prevalence is increasing over time in India as well as in the state.

Further, intentional self-harm is another important cause of deaths. According to reports of Accidental Deaths and Suicides in India (ADSI) compiled

and reported by National Crime Record Bureau (NCRB), Telangana stands third highest among Indian states in terms of suicide rate. As the recent ADSI Report 2019 shows, the suicide rate in Telangana is 20.6% which is third highest next to Kerala (24%) and Chhattisgarh (26%). As many as 7675 people in Telangana died committing suicide in 2019.

The government of Telangana is committed to reduce morbidity and mortality due to non-communicable diseases (NCDs) in the state. While implementing the national programme for prevention and control of cancer, diabetes, cardiovascular diseases and stroke (NPCDCS), the state government initiated screening all its citizens (health profiles) in the age group of 30 to 65 years in the coming years. The suspected cases are referred to the higher centres to treatment and follow up. The focus of the Government will be on Cancers and Cardiovascular diseases which are the main causes of death. STEMI programme is taken up in Hub & Spoke model for preventing deaths due to Myocardial Infarction. The government plans to conduct awareness activities through Health and Wellness Centres (HWC) to sensitize people on these lifestyle diseases.

Farmers account for considerable proportion of deaths by committing suicides (self-harm), due to financial burden of crop failures and accumulated debts. In this regard, the government of Telangana has introduced **Rythu Bandhu** scheme providing financial investment assistance of Rs. 5000/- per acre per season (Khariff and Rabi) and **Rythu**

Bima scheme for preventing the accidental deaths of farmers. These financial support schemes would reduce the suicide rates among farmers in the state.

A massive eye screening programme “*Kanti Velugu*” launched in 2018 screened 1.54 crores population in the state for eye ailments and 40 lakhs are provided with spectacles. It is to help and save the lives of people suffering with eye ailments and those due to lack of vision falling into accidental death traps. Emergency medical care services and transportation of patient to nearest hospitals through 108 ambulances under Emergency Management System (EMS) implemented in the state is saving the lives of many patients from fatality. For the treatment of costly non-communicable diseases, Arogyasri healthcare protection scheme providing financial assistance to healthcare of the poor. Also, as a large part of non-communicable diseases are due to changing lifestyles, the government of Telangana is promoting health and wellness centres as part of the national policy’s preventive measures.

Prevention and Treatment of Substance Abuse

The goal of the Target 3.5 is to by 2030 strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.

Harmful effects of psychoactive substances are well observed and recognized as it requires policy concern. These psychoactive substances consist of psychotropic and narcotic medicine along with harmful use of alcohol. As WHO estimates reported in its World Drug Report 2018 indicate, about 275 million people all over the world used illicit drugs. About 31 million people suffered with drug use disorders. Further, as the WHO estimates reported in Global Status Report on Alcohol and Health 2018, show there are about 3.3 million deaths each year due to harmful use of alcohol. In other words, one in every 20 deaths or 5% of global disease burden is caused by harmful use of alcohol. Effects of substance abuse on individuals, families and societies are overwhelming. Hence, it requires effective mechanism for deterrence of

such substance abuses. In this regard, preventive mechanism consisting of strategies reducing the supply as well as demand for such substances which have potential of dependence and abuse, is critical. Also, treatment of those affected by such substance abuse is crucial.

According to the Narcotic Control Bureau (NCB) of Ministry of Home Affairs (MHA) Govt. of India reports, Telangana has become hub of drug trafficking and people affected with it. The NCB has identified Hyderabad and few other districts in Telangana as highly prone to drug trafficking. As the report of Ministry of Social Justice in 2019 shows, there were 64000 people who injected drugs (PWIDs) in Telangana.

The government of Telangana is committed to strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol while implementing the Andhra Pradesh Narcotic Drugs and Psychotropic Substances Rules 1986 (Telangana Adaptation Order 2016) in alignment with the national Narcotics Drugs and Psychotropic Substance (NDPS) Act. Along with Policy, Prohibition and Excise Departments, the NCB and Directorate of Revenue Intelligence (DRI) have intensified vigilance on drug peddlers and supply chain of the narcotic drugs.

Reducing Death and Injuries due to Road Accidents

The goal of the Target 3.6 is to by 2030 halve the number of deaths and injuries from road traffic accidents.

According to reports of Accidental Deaths and Suicides in India (ADSI) compiled and reported by National Crime Record Bureau (NCRB), there were 21570 road accidents recorded in Telangana state for the year 2019. As many as 6964 people have lost their lives and 21999 people were injured in these road accidents. Telangana stands at 10th position from the highest to lowest among Indian states in respect of road mishap fatalities. One of

the major reasons for such road mishaps leading to fatality are reckless/dangerous driving and driving under the influence of alcohol or drugs. Physical fatigue is another cause of such road accidents. The recent World Bank report²⁷ while appreciating the state government for its application of IT tools for reducing the fatalities, especially in the Outer-Ring-Road (ORR) section, it observed that Telangana is one among 11 states in India having low safety rating for the road network in the state.

The government of Telangana is committed to halve the number of deaths and injuries in the state from road traffic accidents. Measures taken in this regard are improvement of roads, awareness weeks, stringent penalties and punishments, speed limits, helmet and seat belt wearing is made compulsory and prohibition of drunken driving. Also sign boards indicating speed limit, direction diversion, social messages for rough driving, drunk and driving, emergency phone numbers for accidents and medical emergency etc. are crucial. Along with promoting road safety measures, emergency medical services (EMS) provided through 108 ambulances transporting the injured to nearest hospital while providing necessary care by emergency medical technicians is reducing the fatalities and trauma. Providing prompt medical care within one hour period (golden hour) immediately after the accident has the maximum likelihood to prevent death due to traumatic injuries. The government of Telangana is implementing, directives of the Motor Vehicles (Amendment) Act 2019 enacted by the Parliament.

Greater Access to Sexual and Reproductive Healthcare Services

The goal of the Target 3.7 is to ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes by 2030.

Sexual and Reproductive Health (SRH) is a major public health issue. If SRH is not given appropriate policy concern and provided with appropriate healthcare services, a range of adverse outcomes are unavoidable. A comprehensive high quality SRH requires protection, nutrition, education, and community services along with the regular healthcare services. It involves protecting the adolescence which is vulnerable to exploitation, violence and transactional sex, family planning, maternal and new-born health, gender-based violence (GBV) and sexually transmitted infections (STIs) particularly HIV.

Making provisions for basic contraception methods and ensuring availability of emergency contraception would reduce the risk of unplanned pregnancy. The gender-based violence (GBV) includes sexual and/or domestic violence, forced and/or early marriages, and trafficking along with harmful traditional practices like female genital mutation and honour crimes that have adverse consequences. Along with comprehensive abortion care, skilled care for the childbirth is critical to avoid maternal and neonatal deaths due to obstetric and neonatal complications around the time of labour, childbirth and the immediate post-natal period. Hence, universal access to sexual and reproductive healthcare services is critical for achieving the third sustainable development goal.

The government of Telangana is committed to ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes in the state. In this respect, Government of Telangana state is implementing the national programme SABLA meant for adolescent girls, improving their nutritional status and providing them calcium and iron folic acid (IFA) tablets through Anganwadi Centres. The *Rashtriya Kishor Swasthya Karyakram*⁵ (RKSK) addressing the health problems of adolescent boys

27 4 World Bank (2020). Delivering Road Safety in India: Leadership Priorities and Initiatives to 2030, The World Bank, Washington, DC. Accessed at <https://openknowledge.worldbank.org/handle/10986/33339>, on 23/10/2020.

and girls (10-19 years) is being implemented in the state since 2014-15.

Necessary measures are being taken to avoid early marriages. The state of Telangana is one of the front running states in respect of family planning and fertility transition. For sexually transmittable infection (STIs) particularly for HIV, Telangana state AIDS Control Society is implementing action plan to control the spread and treat the infected with proper counseling.

An intensive thrust on family planning during the past two decades has contributed to outstanding achievement in reduction of Total fertility Rate (TFR). Among the adolescents (15-19 years) the fertility rate when expressed in terms of births per 1,000 women in this age has declined sharply from 67 in NFHS-4 (2015-16) to 48 in NFHS-5 (2019-20). The strategic realignment will entail shift of focus from family planning to population stabilisation – delayed age at marriage, birth spacing, improved pill and IUD uptake, RTI and STI management, male sterilisation, etc. - and to steadfast thrust on improved maternal and child health. With a great effort the population is stabilized, and the focus is now on spacing methods. Importance is given to postpartum IUCD. RTI/STI management will be given top priority.

Universal Health Coverage

The goal of the Target 3.8 is to achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all by 2030.

As WHO defines universal health coverage (UHC) means that all individuals and communities receive the healthcare services they need without suffering financial hardship. The UHC covers all the essential and quality healthcare services ranging from health promotion to prevention, treatment, rehabilitation, and palliative care. Further, the

UHC covers all the components of the health system encompassing health service delivery systems, the health workforce, health facilities and communications networks, health technologies, information systems, quality assurance mechanisms, and governance and legislation. Although UHC does not mean complete public financing and free healthcare services to all, it is however concerned with access to and affordability of quality healthcare services along with essential medicines and vaccines for all, especially the poor.

Monitoring of progress and performance in respect of UHC can be possible through indicators such as proportion of population that has access to various essential quality healthcare services; and proportion of population that spends large amount of household income on healthcare services. The WHO has classified in four categories of 16 essential healthcare services under the UHC to monitor their level and equity of coverage²⁸. The four categories are: reproductive, maternal, newborn and child health (RMNCH); infectious diseases; non-communicable diseases; and service capacity and access.

India is among the countries with the highest Out of Pocket (OOP) expenses on health care. Expenditure on drugs constitutes over 67% of out-of-pocket expenditure on health care (NSSO 68th Round 2011-12). High Level Expert Group Report (HLEG) on Universal Health Coverage (UHC) for India recommended that an increase in the public procurement of medicines from around 0.1% to 0.5% of GDP would ensure universal access to essential drugs, greatly reduce the burden of out-of-pocket expenditures, and increase the financial protection for households. If quality essential drugs are provided free of cost to all patients visiting public health facilities, it would bring significant savings to the patients. Provision of free drugs is therefore one of the most important interventions towards mitigating the burden of health care costs. Diagnostics is an integral part of the health

28 Expansion of the previous Adolescent Reproductive & Sexual Health (ARSH) programme under National Health Mission.

system and will help the service providers to make informed decisions. Out-of-Pocket expenditure on diagnostics is high rising sometimes overtaking the OOPE on drugs.

The state government has realised this fact and the drug (medicine) and diagnostics budget has been substantially increased. To overcome problems related affordability of diagnostics services the government is planning to establish Hub & Spoke model of diagnostics. In Hyderabad, for which all Urban Primary Health Centres, Urban Community Health Centres and Area Hospitals act as the spokes. The samples will be collected at the spokes, transported to Hubs, where tests are done, and results are sent online. In districts, the District Hospital lab will be strengthened, which will act as Hub for the primary Health Centres and Community Health Centres. The government of Telangana is making a provision for Drugs and Diagnostics services to be available at free of cost.

In this respect, the government of Telangana is committed to achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality, and affordable essential medicines and vaccines for all in the state by implementing various schemes and programmes through its health department. Telangana state is taking part in implementing the National Health Mission which envisages achievement of universal access to equitable, affordable, and quality healthcare services that are accountable and responsive to people's need.

The government of Telangana is also focusing on secondary healthcare. Secondary healthcare services are provided through a network of District Hospitals, Area Hospitals and Community Health Centres. "Integrated Hospital Facility Management Services" have been established in all Secondary care hospitals for skill upgradation of sanitation & security personnel and patient care providers. Quality upgradation of hospitals is being taken up under National Quality Assurance Programme. In first phase 59 PHCs, 11 Area Hospitals are

being taken up for NQAS certification. Under **Kayakalp** programme cleanliness, hygiene and infection control are promoted in all facilities. District Hospital should be able to provide all basic specialty services and should aim to develop super-specialty services gradually. District Hospital also needs to be ready for epidemic and disaster management all the time. All Districts Hospitals in the new districts will be upgraded.

Further, it is making concerted efforts in ensuring quality care. Quality is the core and most important aspect of services being rendered at any health facility. The Clinicians at the health facility particularly public health facilities mostly deliver their services based on their clinical knowledge. Mostly client's expectations go beyond only cure & includes courtesy, behavior of the staff, cleanliness of the facility & delivery of prompt & respectful service. Few of these clinicians also take care of clients' perspective however in many cases, it is overlooked. A quality-based approach helps in identifying the gaps in service delivery and tracing its roots and linking them to organisational processes. It builds a system of taking effective actions for traversing the gaps, periodic assessment and improving the quality.

Reducing Deaths and Illness due to Hazardous Chemicals and Pollution

The goal of the Target 3.9 is to substantially reduce the number of deaths and illnesses from Hazardous chemicals and air, water and soil Pollution and Contamination by 2030.

The WHO studies and their estimates show millions of people are dying as they are exposed to unhealthy environments. About 12.6 million deaths, comprising 1 in every 4 global deaths in 2012, were a result of people living or working in unhealthy environments. The non-communicable diseases attributable to air pollution took toll of 8.2 million people in 2012. Fast paced industrialization has increased exposure of humankind to hazardous chemicals, and pollution and contamination of air, water and soil. Sustainable development

is possible through improved and healthier environments which in turn reduce deaths and illness due to hazardous chemicals and pollution and contamination.

The government of Telangana is committed to substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination in the state. Piped supply of treated water under **Mission Bhagirath** would overcome the health effects of ground water salinity, fluorosis and other water-borne diseases. Similarly, the **Harithabaram** programme of the state government would increase greenery and improve the air quality and reduce the impact of vehicle pollution. The Telangana State Pollution Control Board (TSPCB) is initiated compliance measures for waste (solid, plastic, biomedical, e-waste) disposal along with hazardous chemical waste and pollution emitting entities (factories) while conducting regular inspections.

Implementing WHO Framework Convention on Tobacco Control

The goal of the Target 3.A is to strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control, as appropriate by 2030.

The WHO Framework Convention on Tobacco Control (WHO-FCTC), which came into force in 2005, is an evidence-based treaty negotiated by countries across the globe in the context of globalization of tobacco epidemic. Almost 168 countries including India are signatories of the treaty. It represents a regulatory strategy to address addictive substances which have harmful effects on health conditions. It asserts on demand reduction strategies as well as that of supply of such substances. A couple of core demand reduction provisions contained in Articles 6-14 of WHO-FCTC are price and tax measures and other non-price measures. The core supply reduction provision contained in Articles 15-17 of WHO-

FCTC include controlling illicit trade in tobacco production and its sales to (also by) minors along with making provisions supporting economically viable alternative activities for those dependent on it.

The Government of Telangana is committed to strengthen the implementation of the WHO's FCTC to control and eliminate the tobacco epidemic in alignment with the national and global strategies for the same.

Supporting R&D of Vaccine and Medicine

The goal of the Target 3.B is to support the research and development of vaccines and medicines for the communicable and non-communicable diseases along with providing access to affordable essential medicines and vaccines by 2030.

This target is largely applicable at the global level and for national government. However, state of Telangana is a hub of pharmaceutical industry in India. The government of Telangana is encouraging the pharmaceutical industry in the state while providing them with required facilities and incentives. Along with **Genome Valley** cluster that already mentioned above, **Pharma City** in the state is strengthening it as a hub of pharmaceuticals industry in India, for both chemical based pharma industry and the bio-technology based pharma (biologics and bio-similars). While most of industry is involved with manufacturing export-oriented generic medicine, the considerable part of industry in the state is having investments in R&D developing new drugs and vaccination, both chemical-based and bio-technology based ones. Government of India has sanctioned Medical Research Unit (MRU) and Genetics Laboratory for diagnosing the patients' illness and for research purpose. Further the Telangana State Medicinal Plant Board (TSMPB) is working towards developing and cultivating medicinal plants for AYUSH sector.

Increase Health Financing and Workforce

The goal of the Target 3.C is to substantially increase health financing and the recruitment, development, training, and retention of the health workforce by 2030.

Currently, the government of Telangana is spending 7 to 8 % of its total budget expenditure (Revenue and Capital) on health. To meet the SDG-3 target, state government is committed to progressively increase health financing in the state.

As regards the workforce in healthcare services includes the professional healthcare workers like physician, surgeons, and dentists (Doctors) and nursing and other technical and supporting health workers. According to a study²⁹ the number of health workers available for 1000 population in Telangana increased from three in 2001 to four in 2011. The latest estimate³⁰ for the year 2018-19, also indicate same density at 4 health professionals per 1000 population in the state. The state performance is better than national average and many other states but it has to increase further the availability of health workers. In this regard, the state government is committed to achieve this objective.

State government is mulling efforts to promote medical education and increase the number of seats in medical courses in the state. Under the Kaloji Narayana Rao University for Health Sciences (KNRUHS), there around 215 colleges with 14,400 seats for various medicine, dental and nursing courses. Of which 27 colleges with 5069 seats are for allopathic medicine, 13 colleges with 1418 seats for dental and surgery, 115 colleges with 5181 seats are for nursing courses. Other colleges and seats are meant for AYUSH category and medical lab technicians. Promoting medical education in the state would increase the

availability of medical professionals for healthcare services.

Capacity for Management of Health Risks

The goal of the Target 3.D is to strengthen the capacity for early warning, risk reduction and management of national and global health risks by 2030.

The Government of Telangana is committed to strengthen the capacity for early warning, risk reduction and management of national and global health risks through gearing up the existing health infrastructure and by expanding it and creating awareness among the public through IEC activities.

With the onset of Covid-19 pandemic in the state, government of Telangana has initiated preventive measures beginning with declaring lockdown and social distancing and wearing masks along with handwashing to prevent the spread of Covid-19. Also, it has tremendous effort in developing curative mechanism through demarking some of the tertiary level hospitals while upgrading them for the Covid-19 infection treatment.

3.3 The Way Forward

To reiterate, Telangana has lateral advantage of reduction in maternal mortality rate and the child mortality rates. The achievement of the state in respect of maternal and child health and enabling factors in this regard, such as anti-natal care, institutional delivery, is remarkable. Continuation of the existing schemes/programme and measures for the purpose will enable achieving further progress while sustaining the progress achieved. One of the challenges in healthcare is disease burden (mortality and morbidity) due to communicable and non- communicable diseases. Government of Telangana has already initiated preventive measures controlling the communicable

29 Motkuri, V. (2018). Status of Maternal and Child Health in Telangana, MPRA Paper No. 88326, Munich Personal RePEc Archive, June. Accessed at: https://www.researchgate.net/publication/323870563_Status_of_Maternal_and_Child_Health_MCH_in_Telangana_on_23/20/2020.

30 See Karan, A.; Negandhi, H.; Hussain, S. et al. (2021). Size, composition and distribution of health workforce in India: why, and where to invest?. Human Resources for Health, Vol. 19 (39). <https://doi.org/10.1186/s12960-021-00575-2>

disease along with facilitating the access to and affordability of treatment in respect of non-communicable diseases (Arogyasri and EMS). State government is also promoting and facilitating the innovative models of healthcare, research and pharmaceutical industry in the state.

The key challenges are: Malnutrition among women and children; triple burden of disease – re-emergence of existing communicable diseases along with newly emerging ones and the epidemiological transition to costly non-communicable diseases (NCDs); high morbidity and mortality due to NCDs, primary healthcare services, human resources in healthcare, increasing cost of healthcare with growing private healthcare services – affordability; access to generic medicine and affordability of non-generic medicine; drug peddling, pollution control.

The way forward for the state government in developing a Healthy Telangana while achieving SDG-3 by ensuring healthy lives and promoting well-being in the state, is as follows.

- Strengthening the Health Systems particularly the Public Health in the state
- Revitalising the Primary Healthcare and strengthening such Centres (rural and urban)
- Healthcare infrastructure at secondary and tertiary levels – vertical and horizontal referral connectivity
- Sexual and Reproductive Healthcare
- Grassroots functionaries for healthcare services – Angawadi workers, ASHAs and ANMs
- Health and Wellness Centres
- Strengthening the Disease Surveillance and Control systems along with Disease Control Programmes
- Screening the health and disease profiles of the population
- Increase the public expenditure on health
- Human Resources for Healthcare (HRH) service especially the healthcare professionals and skilled personnel.
- Promotion of Medical and Nursing Education - Medical Colleges and Seats
- Regulating Cost of Private Healthcare making it affordable
- Ensuring affordability of medicine and access to generic medicine
- Promotion and dissemination of preventive measures of healthcare through IEC activities
- Strengthening TIMS, AIMS, Osmania, Gandhi, NIMS Hospitals
- Encouraging traditional systems of healthcare and medicine (AYUSH) – Aurveda, Siddha, Yunani. Homeopathy
- Encouraging and regulating private healthcare institutions
- Mission Bhagirath - Supply of treated drinking water through household tap connections under reduces the incidence of water borne diseases.
- Preventive measures against Covid-19 like pandemic spread
- State intervention in developing vaccine against Covid-19, pharma and medicine, medical/clinical research
- Developing healthcare infrastructure
- Pollution control measures, Harithaharam, development of parks in cities towns and villages
- Kanti Velugu
- Kidney – Dialysis
- Organ transportation – Jeevandhan

Vision, Mission and Action Plan of Department of Health and Family Welfare

Vision: To achieve good health and well-being for all citizens, through a preventive, promotive, curative, palliative and rehabilitative health care strategy, and to achieve universal access to good quality health care services for all citizens by providing free drugs and diagnostics.

Mission

- To ensure availability of quality healthcare on equitable, assessable and affordable basis across the state with special focus on under-served population and marginalized groups
- To establish comprehensive primary healthcare delivery system and well-functioning linkages with secondary and tertiary healthcare delivery system
- To develop training capacity for providing human resources for health
- To regulate health service delivery and promote rational use of drugs

Action Plan to Achieve Targets

At the time of formation of state, in June 2014, it had multiple challenges to address. The Infant Mortality Rate (IMR) was at 35 (SRS 2015), the Maternal Mortality Ratio was at 92 (SRS 2013), the U-5 Mortality Rate at 37 (SRS 2015). Though the institutional births were at 91.5%, the institutional births in public institutions were at a very low figure of 31%. The Caesarian Sections rate was very high at 58% (75% in private sector). The maternal anaemia was at 49% and the full Immunization was at 68.1% (NFHS-IV).

Against this backdrop the state has taken firm steps to improve the health condition of its citizens and the results are already showing up. The state is consolidating the gains accrued after the state formation in terms of the increased resource allocations; and planning for the next ten years to operationalise a sustainable strategy to address the challenges.

Efforts made by the Government over the past six years have resulted in improvement in the health status of its citizen at large and women and en. The Government has its principal focus on improving the reproductive and child health services and the resultant outcomes. However, equal importance is accorded to disease control interventions; rationalising and strengthening the human resources, infrastructure, capacities, and capabilities; strengthening of monitoring and technical support systems, etc. The highest priority is assigned to addressing the needs of people living in remote and interior areas.

The health system priorities of the state include (i) reducing maternal mortality and improving maternal health; (ii) improving child survival; (iii) fighting infectious diseases; (iv) combating emerging pandemic threats; (v) countering the non-communicable disease threat, (vi) fostering an AIDS-free generation (vii) focusing on family planning and reproductive health (viii) giving priority to school health (ix) rationalising human resources and enhancing capacity building (x) development of infrastructure (xi) provision of drugs and diagnostics free of cost (xii) focus on secondary health care (xiii) focus on tertiary healthcare and medical education (xiv) mainstreaming AYUSH (xv) ensuring quality care (xvi) special focus on tribal and vulnerable groups (xvii) leveraging Information Technology.

Annexure 3.1 Targets and Indicators for SDG 3

Target	Proposed Indicator	Base Value	Target 2022	Target 2025	Target 2030
1.3: End Poverty	1.3.5 Proportion of population (out of total eligible population) receiving social protection benefits under Maternity Benefit	78%	90%	100%	100%
3.1: By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	3.1.1: Maternal Mortality Ratio	63	55	40	32
	Infant Mortality Rate	27	23	18	13
	3.1.2: Percentage of births attended by skilled health personnel	95	97	100	100
	3.1.3: Percentage of women aged 15–49 years with a live birth, for last birth, who received antenatal care, four times or more	74	90	100	100
3.2: By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births	3.2.1: Under-five mortality rate	30	28	18	15
	3.2.2: Neonatal mortality rate	19	17	12	9
	Percentage of pregnant women who received TT injections	94	100	100	100
	3.2.3: Percentage of children aged 12–23 months fully immunized (BCG, Measles and three doses of Pentavalent vaccine)	98	100	100	100
3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	3.3.1: Number of new HIV infections per 1,000 uninfected population	0.1	0	0	0
	3.3.2: Tuberculosis incidence per 100,000 population	158	158	47	0
	3.3.3: Malaria incidence per 1,000 population	0.04	0.02	0	0
	3.3.4: Viral Hepatitis (including A & B) incidence per 100,000 population				
	3.3.5: Dengue: Case Fatality Ratio (CFR)	0.34	0.15	0.11	0.07
	3.3.6: Number of <i>Chikungunya</i> cases	182	150	100	0
	3.3.7: Number of new cases of <i>Kala azar/Leishmaniasis</i>	0	0	0	0
	3.3.8: Lymphatic Filariasis (LF) cases	21	0	0	0
	3.3.9: grade-2 deformity cases for million population amongst new cases of Leprosy	0.93	0.70	0.50	0
	3.3.10: HIV Prevalence rate	0.70%	0.66%	0.62%	0.54%
3.4: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-Being	3.4.1: Number of deaths due to cancer				
	3.4.3: Percentage distribution of leading cause groups of deaths				

Target	Proposed Indicator	Base Value	Target 2022	Target 2025	Target 2030
3.5: Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	3.5.1: Percentage of population (men (15-54 years) and women (15-49 years)) who consume alcohol.	Men 53.8 Women 8.7			
3.7: By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes	3.7.1: Percentage of Currently married women (15-49 years) who use any modern family planning methods	57	60	70	80
	3.7.2: Percentage of Women aged 15-19 years who were already mothers or pregnant.	11	9	5	0
	3.7.3: Institutional Births (%)	96	98	99	100
3.8: Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	3.8.1: Percentage of currently married women (15 to 49 years) who use any modern Family Planning methods	57	60	70	80
	3.8.2: Percentage of TB cases successfully treated (cured plus treatment completed) among TB cases notified to the national health authorities during a specified period	82	92	100	N.A
	3.8.3: Percentage of people living with HIV currently receiving ART among the detected number of adults and children living with HIV	76.50	80	95	100
	3.8.4: Proportion of population in age group 15-49 years who are currently taking antihypertensive medication among age group 15-49 with systolic blood pressure ≥ 140 mmHg, or with diastolic blood pressure ≥ 90 mmHg				
	3.8.5: Proportion of population in age group 15-49 years who are currently taking medication for diabetes (insulin or glycaemic control pills) among number of adults 15-49 years who are having random blood sugar level – high (>140 mg/dl)	1.1	1.1	1.1	0.9
	3.8.6: Proportion of women aged 30-49 years who report they were screened for cervical cancer during the last 5 years	6.6	25	75	100
	3.8.7: Prevalence of current tobacco uses among men and women aged 15 - 49 years	Men 28.2 Women 2.8			
	3.8.8: Total physicians, nurses and midwives per 10000 population				
	3.8.9: Proportion of men and women reporting Asthma 15 to 49 years				
	3.8: Proportion of Children receiving breast feeding within 1 hour	76 %	90%	100%	100%

Target	Proposed Indicator	Base Value	Target 2022	Target 2025	Target 2030
3.a: Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate	3.a.1: Prevalence of current tobacco uses among men and women aged 15 - 49 years	Men 28.2 women 2.8	Men 24 women 2	Men 10 women 1	Men 5 women 0
5.6: Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences	5.6.1: Percentage of Currently married women (15-49 years) who use modern methods of family planning	57	60	65	70
	5.6.2: Unmet need for family planning for currently married women aged 15- 49 years	7.4	6	3	0
	5.6.3: Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV / AIDS	72	100	100	100
5.1	5.1.3: Sex Ratio at Birth	901	930	940	970
	5.2.7: Child Sex Ratio	932	950	960	980

Sustainable Developmental Goal - 4

Building a Skilled, Human Resources Rich, Knowledge Society



Vision

Transforming Telangana state into equitable and dynamic knowledge society with learned citizenry and skilled human resources while ensuring inclusive and equitable quality education from pre-school to tertiary levels, universalizing the school education and expanding access to tertiary education along with promoting vocational education and training.

Providing quality education and enhancing learning outcomes of students; bridging social and gender gaps in school and higher education; ensuring equity and inclusion at all levels of education; ensuring minimum standards in schooling provisions; Support States in implementation of Right of Children to Free and Compulsory Education (RTE) Act, 2009 while entitles all children between the ages of 6-14 years free and compulsory admission, attendance and completion of elementary education; and Strengthening and up-gradation of SCERTs/State Institutes of Education and DIET as a nodal agencies for teacher training; promoting vocationalisation of education and vocational training; ensuring equitable access to quality higher education for all those who aspire for; and bridging the gender, social and regional disparities.

Schemes/Programmes

Samagra Shiksha (Subsuming SSA and RMSA); Mid-day-Meal (MDM) – Schools and extended to colleges, Badibata (enrolment drive), Cash Transfer Vouchers: Reimbursement of Tuition Fee (RTF), Scholarships; Welfare Residential Society Schools (SC/ST/OBC/Minority), KGBVs, Model Schools, ICT@Schools, Residential Degree Colleges, Vocational education, and training – TASK, TSKC; RUSA.

Achievement

With more than 98 per cent of elementary school-age children (of 6-14 years age) and 94% of secondary school age (14-17 years) children attending schools, it is nearing universalization of elementary education; GER in higher education is 36%; around 41000 schools and 2500 junior colleges including more than 3000 welfare residential (including KGBVs and model schools); higher education institutions available for lakh eligible population (18-23 years age) is one of the highest in India; high intensity of technical and professional education; gender parity in school education, Fees Reimbursement, Scholarships. Quantitative expansion of educational institutions and coverage of eligible population (attendance) is reasonably high.

Challenges

Quality of education at all levels (school and higher levels), streamlining the age- specific grades and levels of education, increasing privatisation and issues of affordability, Governance in School and Higher Education, Revitalising the Public Education System.

4.1 The Context

Education, the Great Equalizer

Education is critical in all the perspectives of development: human rights, human development and human capital. While education is valued for its own sake (intrinsic value - an end in itself), it is considered as a means to achieve certain end results (instrumental value). It is in fact instrumental in economic development through increasing the productivity of labour. The instrumental role of education has been acknowledged ever since

the industrialisation. In the context of emerging knowledge-based societies and economies along with globalisation and labour market integrations, education of the labour force or even for the general populace is critical for achieving the sustainable development. Education is also considered as an instrument of equaliser reducing the socio-economic differences and containing the transmission of intergenerational poverty.

However, wide variations in educational development among different population groups (characterised by gender, social group, religion, ethnicity, and economic class) across countries and regions/provinces within the countries has become a cause of concern. Advocacy of the global community and policy makers of all the national/provincial governments are working toward

addressing the concern. Global Agenda-2030 for sustainable development is to ensure reasonably equitable educational development with quality education for across the globe for furthering social development and economic progress in a sustainable way.

4.2 SDG -4 Targets

The Fourth Sustainable Development Goal (SDG-4) is about quality education. It is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. This goal has seven Targets and three Means of implementation. Following are the dimensions of targets and their goals which are although set at global level they are equally applicable at local level as well.

Table 4.1 Target Dimensions

Target	Target Dimension	Goal of each Target by 2030
4.1	Free Primary and Secondary Education	For all girls and boys
4.2	Equal Access to Quality Pre-Primary Education	All girls and boys ready for primary schooling
4.3	Equal Access to Affordable Technical, Vocational and Higher Education	For all women and men
4.4	Increase the number of People with relevant Skills for Financial success	Substantially increase number of youth and adults
4.5	Eliminate all Discrimination in Education	Eliminate gender disparities and ensure equal access at all levels of education
4.6	Universal Literacy and Numeracy	All youth and substantial proportion of adults (men and women equally)
4.7	Education for Sustainable Development and Global Citizenship	All learners acquire knowledge and skills for sustainable development of implementation
Means		
4.A	Build and Upgrade Inclusive and Safe Schools	All children have access to safe, inclusive and effective learning environment
4.B	Expand Higher Education Scholarships	Substantially expand number of Scholarships
4.C	Increase the Supply of Qualified Teachers	Substantially increase the supply of qualified teachers

Source: UNDP.

In this respect, the government of Telangana, through its nodal Education Department is strongly committed to achieving the SDG-4 in alignment with its commitment to all the SDGs while complying with the global framework for Agenda 2030. The government of Telangana is driven by transforming Telangana State into equitable and dynamic knowledge society with

learned citizenry and skilled human resources while ensuring inclusive and equitable quality education from pre-school to tertiary levels, universalising the school education and expanding access to tertiary education along with promoting vocational education and training. The implementation of National Education Policy (NEP) 2020 is also in commensurate with the SDG-4.

Educational Development in Telangana: Achievements

Covid-19 outbreak has paralysed the education systems across the globe as well as in India and in the State. The academic year 2019-20 was partially affected as the containment measures for the pandemic have begun since the third week of March 2020 (Janata curfew followed by full lockdown), by the time mostly the academic activity of annual/board exams were either half-way or pending in the state: Board exam for higher secondary level were completed, for Class X Board exams were half-way through, Semester exams of higher education were pending. But the 2020-21 academic year was completely affected with the prolonged pandemic containment measures and hence resorted the remote learning for the academic curriculum. Post-lockdown, Government of Telangana initiated required measures: students of Class I to IX were automatically promoted to next without exams, for the Class X based on completed exams pending other papers results were declared. Steps were initiated for conducting initially postponed entrance examination for various courses of higher education and followed by counselling and admissions with all precautionary measures (safety protocols). In Telangana, more than 55 per cent of enrolment in school education, and 80% of higher education enrolment is under private management institutions.

For the subsequent academic year (2020-21), remote learning was the prominent mode of curricular activity of teaching-learning in the state as elsewhere in the globe. A revised and alternative academic calendar was prepared by the State Council of Educational Research and Training (SCERT) along with syllabus contraction for the year. As remote learning is contingent on the electronic devices (smart-phone, tab, desktop or laptop) and internet connectivity, the digital divide in this regard affected such students in both public and private arenas. The State government had initiated from September 1 2020, transmissions of

digital classes through television on T-SAT network channels and Doordarshan. On the other hand, the Telangana Social Welfare Residential Educational Institutions Society (TSWREIS) launched peer learning initiative i.e. the Village Learning Circles (VLCs). In this initiative, high school students teach their peers and children from other classes. There were unsuccessful initiatives, open schools in August 2020 but they were shut down as many children fell sick due to infection and again in February 2021 when on-set of second wave of the pandemic hit it again.

Notwithstanding disruption, the Telangana State achievements in respect of the educational development are modest. According to the NITI Ayog's assessment of states' performance in respect of SDG goals, targets and indicators as presented in its report of the SDG India: Index 2018. As per the report, Telangana was one among the frontrunner States (with its score 66) in respect of SDG-4 which is concerned with quality education. However, in the subsequent report of SDG India: Index and Dashboard 2019-20, Telangana State is placed in the league of performers based on its score (64; while the national average is 58) with respect to SDG-4. All the *other southern states* including Maharashtra, are in the category of *front runners* based on their performance in this regard.

Telangana State performance and progress in primary to higher education is however better than national average. As the estimates of recent 75th (2017-18) round NSSO survey on Social Consumption on Education show the average number of years of (formal) schooling for adult (15+years age) population in the state is 10.7 which is second highest among the states in India, next only to Delhi³¹. However, one of the aspects that the State is lagging in adult literacy. Also the quality of education from primary to tertiary levels is a cause of concern in the state, like in areas across India. Notwithstanding that with concerted efforts the government of Telangana will be able to achieve the goal.

31 1 See NSS KI (75/25.2): Key Indicators of Household Social Consumption on Education in India.

Table 4.2a: Number of School by Type and Management in Telangana, 2018-19

Management and Residential Type			Number			Percentage		
			Schools	Enrolment	Teachers	Schools	Enrolment	Teachers
1			2	3	4	5	6	7
Non-Residential	1	Local Body (NR)	24299	1800107	103887	57.4	27.5	40.4
	2	State Govt. (NR)	3576	440521	16760	8.4	6.7	6.5
	3	Central Govt. (NR)	84	35962	681	0.2	0.5	0.3
	4	Aided (NR)	698	104575	3177	1.6	1.6	1.2
	5	Private Unaided (NR)	11353	3518302	108705	26.8	53.7	42.2
	6	Others (NR)	178	11951	455	0.4	0.2	0.2
	Total (non-Residential)		40188	5911418	233665	94.9	90.2	90.8
Residential	7	Non-ashram (R)-Govt	831	264635	8415	2.0	4.0	3.3
	8	KGBV(R)	475	87106	4999	1.1	1.3	1.9
	9	Model (R)	176	113054	3151	0.4	1.7	1.2
	10	Private (R)	277	98006	3628	0.7	1.5	1.4
	11	Others (R)	408	82482	3509	1.0	1.3	1.4
	Total (Residential)		2167	645283	23702	5.1	9.8	9.2
Grand Total			42355	6556701	257367	100	100	100

Notes: 1. NR – Non-Residential; R – Residential; 2. Most of the Non-Ashram Residential school except 10 are under the State government management including the various welfare residential institutions; 3. Most of the Others Residential schools are Ashram type (377) managed by Tribal Welfare Department; 4. KGBV – Kasturiba Gandhi Balika Vidyalayas

Source: U-DISE, 2018-19

Telangana State has a network of 42355 schools (primary to higher secondary: public and private) with around 2.6 lakh teachers and holding 65.6 lakh enrolment in 2018-19, providing educational services to eligible age-group population in the State. It includes nearly around 2500 higher secondary institutions (Junior Colleges) in the State. Also included are 1849 state-run residential schools (known as Gurkulums) specially focused on serving children belonging to various marginalised sections and backward classes in the state. There are 475 Kasturiba Gandhi Balika Vidyalayas (KGBVs) for girl children, about 248

institutions³² for scheduled castes' children, 146 institutions³³ for tribal children (Non-Ashram), 259 institutions³⁴ for backward classes' children and 204 institutions³⁵ for minorities' children along with 176 model schools in educationally backward blocks/mandals in the state. Of the total institutions of school education, 27.5% of schools and 55% of enrolment in the state is under private management.

For the post-secondary education, there are around 2000 higher education institutions (HEIs, including universities and colleges) in

32 Under the Telangana Social Welfare Residential Educational Institutions Society (TSWREIS) providing quality education in English medium up to graduation for the children belonging to Scheduled Castes (SCs)

33 Functioning under the Telangana Tribal Welfare Residential Educational Institutions Society (TTWREIS which is known as Gurukulum) providing education to tribal children in the state.

34 Functioning under Mahatma Jyotiba Phule Telangana Backward Classes Welfare Residential Educational Institutions Society (MJPTBCWREIS) which was established in 2012-13 meant for the children of other backward classes (OBCs) in the state.

35 Residential schools and colleges functioning under the Telangana Minorities Residential Educational Institutions Society (TMREIS) It was established in 2014-15 for minority children in the state.

the state, although most of them are under private management (80%). Telangana State stands one among the top states in India having highest (52) number of colleges (HEIs) per lakh population. The Government of Telangana while subsidising the cost of education through the cash transfer vouchers, is encouraging the private sector participation in education. Private sector garners more than 50 per cent of enrolment in school education and 80 per cent of enrolment in higher education in the State. Along with various types of scholarship schemes sanctioning to the eligible students through online (TS-ePASS³⁶) system, the government of Telangana State is also implementing reimbursement of tuition-fee (RTF) scheme especially for those pursuing technical and higher education. Therefore, current attendance rates across various age-groups below 30 years age in the State are higher than national average and above many other states.

The State of Telangana is nearing the constitutional mandate that all the 6-14 years age children must be in (elementary) schools. According to an estimate based on first Periodic Labour Force Survey (PLFS-1) in 2017-18, around 98 per cent of children in this age-group in the state are attending schools³⁷. The state performance in this regard is better than national average and it stands above many other states. However, still there is a gap in universalising the elementary education for 6-14 years age children in the state. The state government in this respect is committed for it in alignment with the SDGs.

As per the estimates based on Unified District Information on School Education (U-DISE), the gross enrolment ratio (GER) in primary and middle levels of education in the state is higher than 100 per cent. It is because there are many under-aged and over-aged children in these levels of education. The net enrolment ratio (NER) that discounts these under- and over-aged children in

each of these levels of education is less than 100 per cent in the state. Estimates based on NSSO's recent 75th (2017-18) round survey on Social Consumption on Education, show that NERs in the state are 82% at primary and 75.8% at middle level. However, NER for elementary level (primary and middle combined) is 91%. The low NER at primary and middle levels individually is because of the under- and over-aged children in each of these levels. Similarly, NER in the state for lower secondary level is 77% and at higher secondary it is 75%. But the combined NER for the whole of secondary (lower and higher secondary) level in the state is 84%. It is even more interesting to note that the combined NER for all the levels within school education (Primary to Higher Secondary) in the state is around 95%. It indicates that state should focus on streamlining the school enrolment, and attendance in age-appropriate classes and age-appropriate level of education to improve NER at each level of education in the state.

As regards the critical aspect of quality in school education, the performance of the Telangana State so far is not up to the mark. As per the estimates of Annual Status of Education Report (ASER) and the National Achievement Survey (NAS), the State stands below the national average and many other states. Hence, the state must concentrate on improving the quality of school education.

Overall, the quantitative expansion of educational institutions and coverage of eligible population (attendance) is reasonably high: more than 98 per cent of elementary school-age children (of 6-14 years age) and 94% of secondary school age (14-17 years) children in the state are attending schools, it is nearing universalization of elementary education; GER in higher education is 36%; around 41000 schools and 2500 junior colleges including more than 2000 welfare residential (including KGBVs and model schools); higher education institutions available for lakh eligible population (18-23 years

36 Telangana State electronic Payment and Application System of Scholarships (TS-ePASS).

37 See Motkuri and Revathi (November 2020) Educational Development in Telangana, CESS-RSEPPG Background Paper #1, Research Cell on Education, Centre for Economic and Social Studies, Hyderabad.

age) is one of the highest in India; high intensity of technical and professional education; gender parity in school education; supporting cash transfer scheme are: Fees Reimbursement (RTF) and other Scholarships. Concerns are about the quality of education, skill developments and employability of graduates.

In this respect the state's nodal education department and all the other line departments are committed to achieving the goals of the targets concerning with the SDG-4 along with the implementation of NEP 2020 which is in fact in alignment with the SDG-4.

Free Primary and Secondary Education

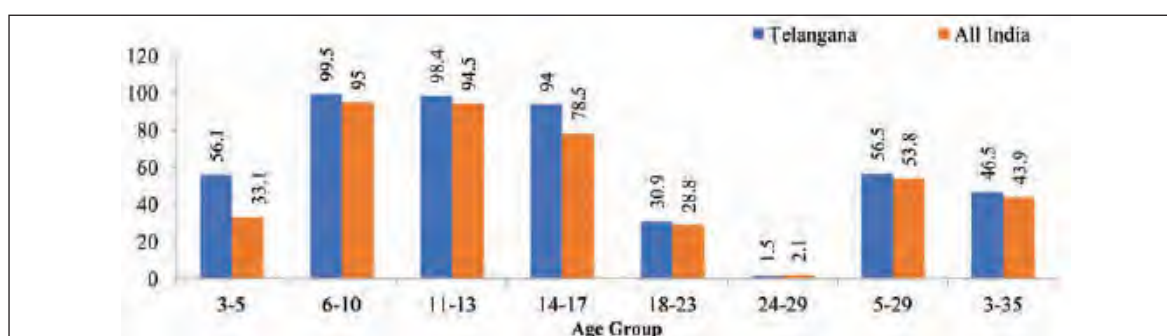
The goal of the Target 4.1 is to ensure by 2030 that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.

Universalisation of school education (primary to higher secondary) is critical for sustainable development. It is not only to meet the normative requirements of constitutional mandate and ensuring right to education along with meeting goal of the Rashtriya Madhyamik Shiksha Abhiyan (RMSA), but also to meet the developmental needs of society, economy and children who are the future citizens and human resources. The emerging knowledge-based economy requires human resources with a minimum of secondary

education. In this regard, government of Telangana has been making concerted efforts in strengthening its education system to meet these developmental needs of children, society, and economy.

Enrolment in school education, attendance, retention, and transition from one level to next are important factors and key indicators relating to the school education. Statistics of the School Education Department of Telangana state or U-DISE show that gross enrolment ratio for different levels of school education in the state is more than 100 per cent. It is true for both the male and female children. Enrolment however does not ensure attendance; hence one needs look beyond the enrolment for attendance rates. As the estimates of recent 75th (2017-18) round survey of NSSO on Social Consumption of Education show 46.5 per cent of 3-35 years age population in the state were attending educational institutions³⁸. Telangana stands 5th highest among the Indian states in this respect, next to Kerala (53.3%), Himachal Pradesh (52.6%), Jammu and Kashmir (48.3%) and Uttarakhand (48%). Further, the estimates of the survey show that age-specific attendance rates in the state of Telangana were: 99.5% among 6- 10 years age children, 98.4% among the 11-13 years age, 94% of the 14-17 years age. The performance of the state in respect of school-age children's attendance rates appears to be far better than national average and many other states in India.

Figure 4.1a: Age-Specific Attendance Rates of Children, Adolescents and Youth in Telangana and India, 2017-18



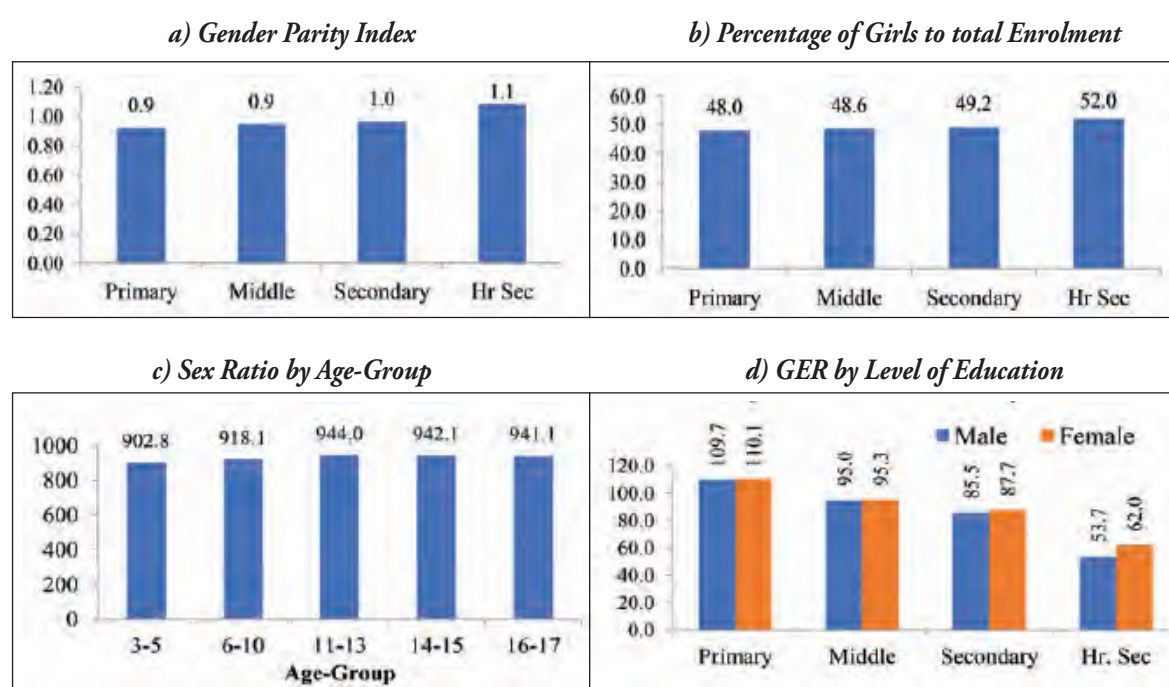
Source: NSSO 75th (2017-18) Round – Social Consumption on Education.

38 See NSS KI (75/25.2): Key Indicators of Household Social Consumption on Education in India.

Gender disparity in school education is one of the causes of concern. On the surface, there observed to be gender disparity by level education in the State of Telangana (Figure-4.1b). But one has to understand that given the adverse sex ratio of school age population achieving gender parity value equal to one is not possible as it is moving to universalising the school education. However, when one examines the gross enrolment ratio (GER) separately for male and female population

by level of education, it indicates there has not been much difference between male and female children in this regard. In fact, the GER of girls is found to be marginally higher than that of boys, it is significantly so in case of higher secondary education. It means the gender parity (equal to 1) in school education by ratio of male and female GERs is already achieved in the state and it needs to be sustained.

Figure-4.1b: Gender-Parity by Level of School Education in Telangana, 2018-19



Notes: 1. Expected value for Gender-Parity is equal to 1 wherein the number of girls equal to number of boys; 2. Reference year for the Sex Ratio is 2019, it is based on the projected Population of the Ministry of Education, Govt of India; 3. Sex Ratio refers to number of females per 1000 males.

Source: Calculations based on U-DISE, 2018-19: <http://dashboard.seshagun.gov.in/mhrdreports/#/reportDashboard/sReport>

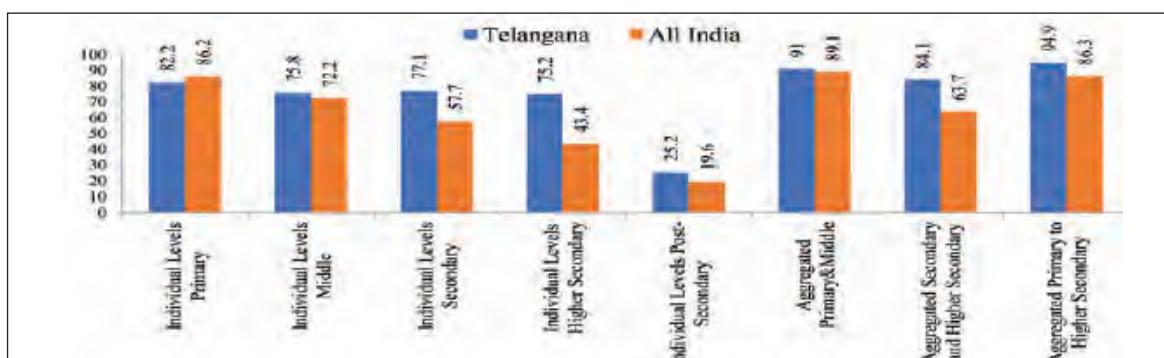
Although State performance in respect of attendance rates of school-age children appears to be close to universalization and much better among Indian States, its performance with respect to net enrolment ratio (NER) appears to be far short of universalisation (Figure 4.1c). One must not be distracted by noticing a seemingly contradictory regarding Telangana state performance in respect net enrolment rate (NER) by level of school education that shows a considerable gap. Herein it is to be noted that, it is

due to over-age and under-age children in different levels of education, as mentioned in the beginning. In fact, it is reflected: NER by individual level is low but aggregated NER of two consecutive levels and/or all the levels of school education (primary to higher secondary) is observed to much better. It indicates that although most of the school-age children in the state are attending schools, they are not in the age- appropriate class/grade and/or level of school education hence the low NER by levels of education. In this regard, appropriate

strategic action plan is required to streamlining the enrolment and attendance into age-appropriate class/grade and/or level of school education. The

government of Telangana is committed to focus on this aspect now onwards.

Figure 4.1c: Net Enrolment Ratio by Level of Education in Telangana and India, 2017-18



Source: NSS Report No.585: Household Social Consumption on Education in India

Most importantly, SDG-4 is concerned with minimizing the number of school-age children who remained out of school. In Telangana state there are still some children who are found to be out of school (including never enrolled as well as the enrolled but currently not attending), but the proportion of such out-of-school children is very minimal in the state when compared to national average or such incidence in many other states.

Historically, primary education was in fact neglected for a long time, in Hyderabad state during the Nizams' era and in combined state of Andhra Pradesh during the post-independence period. Prior to mid-1990s, two Telugu States (Andhra Pradesh and Telangana as a combined one) were having dubious distinction of higher incidence of child labour and educationally deprived (% of out-of-school) children in India. However, the initiatives of Operation Black Board (OBB) during late 1980s and District Primary Education Programme (DPEP) during 1990s following the second National Education Policy 1986 revitalised progress in the combined state of Andhra Pradesh. The progress during the last two decades is remarkable. With the initiatives of Sarva Shiksha Abhiyan (SSA) since the turn of 21st Century, further progress in school education was made in the state. These two states due to their concentrated efforts have improved remarkably in

terms of enrolment and attendance rates of school-age children since mid-1990s.

Post-bifurcation, school education in Telangana made headway near to universalisation, but there are still some children especially in remote areas and in marginalised communities, who are out of school. The government of Telangana state is committed to make it zero rate of such incidence. In this regard, the government of Telangana state is implementing **Badi Bata** (School Enrolment/ Admission Drive) programmes involving all schoolteachers in enrolling all the out-of-school children in the state.

The goal of Rashtriya Madhyamik Shiksha Abhiyan (RMSA), which was initiated in 2009 and is now subsumed into Samagra Shiksha or Integrated Scheme for School Education (ISSE), was intended to universalising the secondary education. With around 94 per cent of secondary school-age children in the state attending schools, its performance is better than national average. The government of Telangana will ensure the rest 6% of children of this age-group will also attend schools and universalise the attendance among all the school-age children (6-17 years age).

The Samagra Shiksha (or ISSE) scheme of Government of India subsumed both the SSA and RMSA, came into effect since 2019-20. It is

concerned with integrating the school education system, pre-primary to higher secondary (Kindergarten to 12th grade), and providing universal access to all the levels of school education. The national policy in this regard is in alignment with the same target of SDG-4. The government of Telangana is committed to achieving the same while implementing ISSE, RTE and scaling up

and improving government schools especially those of various *welfare residential educational institutions* in the state. *Cash transfer and non-cash transfer schemes* (scholarships and/or hostels) are to incentivizing and encouraging the children and youth their participation in education and addressing the affordability issues of those with poor family backgrounds.

Table 4.2b: Number of Welfare Residential Institutions in Telangana

Year	Education Department	Social Welfare	Tribal Welfare	Minority Welfare	BC Welfare
2014-15	37	134	96	12	19
2020-21	37	268	133	204	281

Source: Education Department.

Although more than 55 per cent of total enrolment in school education is under private management schools, public education system consisting of 75 percent of total schools in the state is reaching out to and serving more-broad-based and under-served population. It is providing educational opportunities (access) to children belonging to marginalised sections, socially and economically backward classes and those in educationally backward areas and remote locations. The government of Telangana's initiative of **KG to PG scheme** providing free education from Kindergarten (KG) to Post-Graduation (PG) is now being implemented by initially covering the disadvantaged sections (girls, SCs/STs/OBCs, minorities and poor) through residential and welfare schools and providing scholarships in the state. It will be extended in due course to all the sections of the society.

The government Telangana states strictly implementing **Mid-day-Meal** (MDM) programme in all the elementary public schools (Govt. and Aided). In fact, the programme serving students with freshly cooked meal is extended from elementary level to higher secondary level in the state. It is to eliminate the hunger and malnutrition which affects the cognitive and physical development of school-going children which in turn affects the quality of education they

receive. Also, it increases the school enrolment and attendance along with improving socialisation among children. The state government is supplying **super fine quality rice** (sanna biyyam) for MDM programme while bearing the additional cost on its own. The MDM programme in the state is extended to its junior colleges and Polytechnique's as well.

Beyond the enrolment and attendance, it is the quality education provided in schools and the learning-outcomes and achievements of students which is a cause of serious concern not only in Telangana state but also across the country. Learning deficits cause wastage of resources in terms of inputs as well as human resources thus prepared. The recent Annual Status of Education Report (ASER) and National Achievement Survey (NAS) report indicate certain extent of learning deficits in the school education system of the country with wide variations across states. The National Education Policy (NEP) 2020 is concerned with such learning deficits and necessity of strategic action plan in a mission mode to tackle the challenge.

As the estimates of NAS 2017 show the average learning achievement (the correct responses to the subjects) of Class III students in Telangana state were 69% in Mathematics, 67% in EVS

(Environmental Studies) and 68% in Languages. For Class V students in the above subjects respectively it was 56%, 54% and 57% and for Class VIII students their learning achievement in these subjects respectively was 37%, 40% and 53%. Further, the survey revealed that about 89% children in the state could understand what teacher says in the classroom. Nearly 95% children (studying Class III, V and VIII) in the state liked attending school. Regarding the teachers understanding, satisfaction and their requirement, the NAS revealed that 72% of teachers in the state fully understand the curricular goals; 62% of teachers were highly satisfied with their job; and 86% teachers have adequate instructional material and supplies. Along with certain positive things about school education in the state, certain extent of learning deficits are explicit.

The government of Telangana has been concerned with the learning achievement of children in school education and is making effort toward improving the same. In this regard, the initiatives of SSA were in fact channeled towards quality interventions that range from making academic monitoring of schools more effective to learning enhancement programs. They were to improve the motivation and capability of teachers to deliver quality education. The government of Telangana initiated the 'Nishtha' training program which is an in-service training initiative run by the SCERT to strengthen teachers' understanding of critical classroom aspects such as innovative teaching practices and provision of a holistic curriculum. As envisaged in NEP 2020, the strategic National Mission for Foundational Literacy and Numeracy (FLN) will be implemented in the state.

In all, with all the achievements so far and the initiatives in place to achieve further progress in school education, the government of Telangana will deliver its commitment in realising the target of SDG-4 in the State.

Equal Access to Quality Pre-Primary Education

The goal of the Target 4.2 is to ensure by 2030 that all girls and boys are ready for primary education.

Growing evidence of neuro-science research shows that most part of the child's cumulative brain development takes place before the age of 6 years. Following that experimental-research programmes in turn have shown the positive impact of early childhood care and education (ECCE) on healthy brain development and growth during this early age of the child. Acknowledging the critical importance of appropriate care and stimulation of brain in this phase of child life, policy makers across the globe have initiated ECCE interventions. The recent National Education Policy (NEP) 2020, in fact in alignment with SDG-4, has emphasised the pre-school education which has been neglected for a long time in the country. Although ICDS, implemented on pilot basis initially in 1975, gradually scaled-up thereafter and finally universalised across habitations in the country by 12th Five-Year-Plan. Its focus was nutritional supplementation. Pre-school component of ICDS/ Anganwadi services was neglected in the country but gained momentum in the recent past. National Nutritional Policy 1993 followed by National Health Policy 2002 have noted the importance of ECCE. With the Position Paper on ECCE for National Curriculum Framework 2005 followed National Early Childhood Care and Education Policy of 2013; National Early Childhood Care and Education Curriculum Framework of 2014; National Plan of Action for Children 2016; Samagra Shiksha Abhiyan Framework of 2018; and the National Education Policy (NEP) 2020 there has been policy action in this regard. With the implementation of NEP 2020 and the Samagra Shiksha (or ISSE) scheme covering pre-primary to higher secondary since 2019-20, they are expected to serve the purpose and ensure headway progress in this regard.

In Telangana state the percentage of children 3-6 years age and attending pre-school is substantial and better than national average but still lot more is to be achieved. As per the ASER 2018, about 95 per cent of the rural children of this age group in Telangana state are attending Anganwadis and Pre-schooling. It is above the national average (86%). Most of them are enrolled in Anganwadis centres (AWCs) for nutritional supplementation. Telangana state has network of 35700 AWCs. In most of the AWCs across the country, pre-school education component of ICDS is somewhat neglected. Therefore, according to the recent 75th round (2017-18) of NSSO's Survey on Social Consumption of Education which covered 3 to 35 years persons, nearly 56 per cent of children (rural and urban combined) in the 3-5 years are currently attending schools (pre-schools or otherwise) in the state while the national average is very low at 33 per cent. Telangana state in this regard is third highest, next to Punjab (61.6%) and Kerala (58.3%).

In this respect although State performance in the all-India context appears to be much better, it needs to universalise the attendance of pre-school-age children in pre-schooling institutions. The National Early Childhood Care and Education (ECCE) Policy of 2013 and National Early Childhood Care and Education Curriculum Framework of 2014 have set up certain norms and standards for implementing the universal ECCE particularly that of pre-school component. In this regard, it involves strengthening of the Anganwadi Centres, as considerable proportion of children are enrolled in such centres, with a focus on revitalising the pre-school education components of ICDS packages in all the centres. Further, it also involves the proper training and capacity building of Anganwadi teachers. All round development of children through Early Childhood Care and Education (ECCE) ICDS centres in respect of providing pre-school education be improved by building the institutional capacity such centres. It all involves with the physical infrastructure and access to play and learning materials, classroom composition, organization and management, pupil-teacher ratio,

curriculum content and processes, and teacher characteristics and disposition.

All the 35700 AWCs across 33 districts in the state have covered around 4.5 lakh children of 3-5 years age-group. Along with the other nutritional supplementation activities, these AWCs are provided with preschool education kit, containing activity books, workbooks, charts, toys and other items to support learning. Child Assessment Cards along with implementing the three-year curriculum are provided. As the performance of the AWCs in respect of pre-school education however dependent on building institutional capacity including Anganwadi teacher training, the state government would have a strategic action plan for achieving the intended outcomes.

Also, wherever necessary, the number of Anganwadi centres (AWCs) have to be increased to cover the underserved areas in order to make it a universal coverage. Inadequacy of infrastructure, like own buildings, enough number of rooms with proper ventilation and electricity along with other facilities in the existing AWCs is a cause of concern. As a considerable number (thousands) of the AWCs are functioning in rented buildings, the focus of the government of Telangana and the concerned Department of Women and Child Welfare would be to reduce number of AWCs functioning in rented building and increase the number of AWCs with own building. Also, as the number of children in 3-6 years would increase in the next decade and the enrolment of these children into AWCs would have to be increased.

Equal Access to Affordable Technical, Vocational and Higher Education

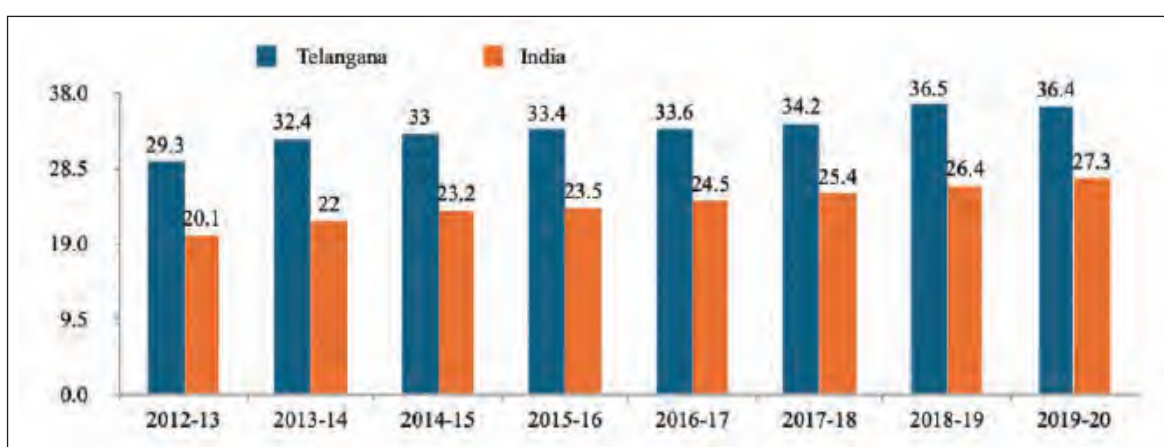
The goal of the Target 4.3 is to ensure by 2030 equal access for all women and men to affordable and quality technical, vocational, and tertiary education including that of university.

According to All India Survey of Higher Education (AISHE) annual reports, the gross enrolment ratio (GER) of Telangana state in respect of higher education is 36 per cent in 2018-19.

It is above national average (26%) and stands above many other states in India. There is a 10 percentage points difference between the national average and the state's achievement in this regard. As per the estimates based on NSSO's recent 75th round (2018-19) survey on *social consumption on education*, the GER at post-secondary level in the state is 29% while the national average being 6 percentage points low at 23%. The estimates from

the same source indicate that nearly one-third (31%) of college-age (18-23 years age) population in the state is attending educational institutions, while the national average is 29% (Figure 4.3a). As NEP 2020 in alignment with the SDG-4 has targeted to increase the GER in education to 50% in the next one-and-half decade, Telangana has the potential to achieve the target given its performance during the last two decade.

Figure 4.2a: Gross Enrolment Ratio (GER) for Higher Education in Telangana and India



Source: AISHE.

Gender disparity wherein low rate of women participation in higher education has been a cause of concern in the perspectives of equity. However, according to latest AISHE report 2018-19, number of female enrolments in higher education is higher than of the boys in the state Telangana whereas the national level scenario is observed to be different. In Telangana, the share of females in enrolment of higher education is exceeding their share in college-age population of the state (Figure-4.3b). The national scenario indicates, women still have low representation in higher education than their share in population. Gender parity (index being marginally higher than one) is in favour of the women in higher education in the state. The state performance in respect of gender equity needs to be sustained. Unlike school education the entry into higher education is a merit-based one, wherein the affirmative action of the state in terms of *women-quota of reservations* in

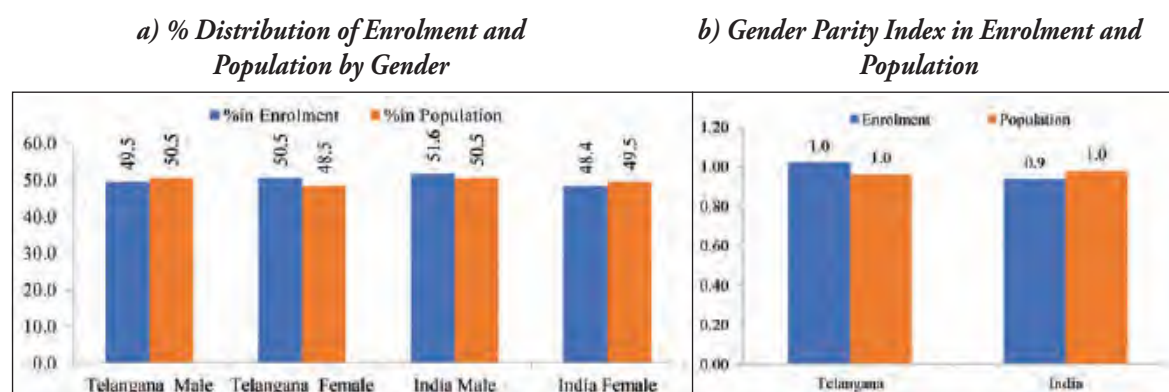
higher education admissions / seats along with the residential colleges for girls (social/BC/Minority welfare) are playing critical role in girls access to higher education.

In terms of diversity of disciplines, nearly one-quarter of the total students in the state are pursuing higher and post-secondary level of education are pursuing technical or professional courses at this level. The national average in this respect is well below one-fourth of such students. It indicates that the propensity to pursue technical and professional course is higher in the state of Telangana. The government of Telangana state has been encouraging and providing an opportunity to pursue higher education especially in technical courses through the financial support scheme i.e. reimbursement of tuition-fee (RTF) implemented for the aspiring students from economically backward classes in the state.

There are nearly 2000 higher education institutions in the state: 24 universities, more than 200 engineering colleges with one lakh intake, along with colleges of Pharmacy (127 with 10000 intake), management (311 with 35000), 50 medical colleges (incl. dental and AYUSH) and 115 nursing

colleges, specialised in computer courses (42 with 2500 intake), and teacher training (218 with 19000 intake) colleges along with 1050-degree colleges. There are around 146 polytechnics having 36500 intake capacity and imparting skills through various vocational courses along with 289 ITIs.

Figure 4.2b: % Distribution of Enrolment in Higher Education and College-age Population (18-23 Years) by Gender in Telangana State, 2018-19



Notes: Enrolment Figures refers to Higher Education whereas population figures refer to College-age population (18-23 years).

Source: AISHE 2018-19

However, gender and social and religious group disparities along with rural-urban disparities are a cause of concern. The government of Telangana state is committed to reduce such disparities and to ensure equal access to affordable technical, vocational and higher education for all the aspirants. While utilising Union Govt's strategic funding under Rashtriya Uchchatar Shiksha Abhiyan (RUSA), the government of Telangana state has been making its own efforts and initiatives in strengthening the higher education including technical, professional and vocational education. To strengthening foundational pillars of access, equity, and quality in higher education it has undertaken some important initiatives such as **Degree Online Services, Telangana (DOST)** an online admission system that has made it easier for prospective students to apply.

Further to improve career prospects of students in higher education, a "T-SAT Nipuna Channel" has been installed in 105 Government Degree Colleges to broadcast educational programmes for students to access critical information to strengthen

educational performance and develop awareness of career prospects. It initiated the Telangana Skills and Knowledge Centre (TSKC) which is designed to hone young graduates' transferrable skills, such as in communications and ICT, to strengthen their potential for employment.

Increase the number of people with relevant skills for Financial Success

The goal of the Target 4.4 is: by 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

As mentioned above the tendency of students to pursuing technical education is very high in the state. Almost 50 per cent of enrolment in higher education in the state is in the disciplines and courses related to technical and professional ones. Along with this formal system, there are many vocational and other skill development initiatives, formal and informal nature, implemented in the

state. The number of technical and professional (engineering, management) higher education institutions along with institutions for vocational courses (polytechnics and ITIs) provide base for acquiring such skills required in the job market.

Further, the government of Telangana state is implementing certain skill development initiatives and interventions (such as Telangana Academy for Skill and Knowledge (TASK) and Telangana Skill and Knowledge Centre (TSKC)) on its own along with those of Government of India schemes (under Deen Dayal Upadhyay Grameen Kaushalya Yojana (DDUGKY) and Prime Minister Kaushal Vikas Yojana (PMKVY) which is implemented through National Skill Development Corporation (NSDC)). TSKCs were set up in degree colleges in the state to train the youth with industry relevant skills. Besides the 289 ITIs, there are around 192 institutions in the state that offer skill training in 12 different trades. The Government of India's short-term skill training initiative (PMKVY) is implemented in the state through 83 private training partners and 279 training centres along with 27 ITIs. A good number of youth are being benefited with such initiatives in the state. State government is planning to further set-up around 41 skill development centres (SDCs) in the polytechnique colleges.

In this respect, the Telangana state has all the infrastructure and facilities to substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for securing decent jobs and for taking up entrepreneurship.

Eliminating Discrimination in Education

The goal of the Target 4.5 is to by 2030 eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for all.

Gender disparities in education are most prevalent phenomenon in literacy rates and completion rates at different levels of education. However, such disparities are in fact narrowed down over a period. Telangana state is on the verge of achieving gender parity in school education enrolment and attendance. But social group disparities, although narrowing, continue to persist in most of the indicators of educational development including literacy, enrolment, attendance and completion rates along with years of schooling. As it is observed above (Target 1 and Target 3), gender parity in the state in terms of their enrolment in school and higher education has been realised. Also, 33 per cent reservation of seats for women in educational institutions (especially the post-secondary) and public services employment is implemented in the state, both worked to be opportunity and incentive for the girls's education.

However, girls appear to be more dependent on public education system than private one, as the share of girls in public schools in all the four level of education is more than 52%. When compared with the share of girls in 6-17 year-age population at 47.8%, they are over representing in the public institution in all the levels of school education in the state. In this regard it can be said that public institutions in the state are addressing gender equity concerns.

Table 4.2c: Representation of Girls in Enrolment within Public and Private Management institutions by Level of School Education in Telangana, 2018-19

School Management	Percent of Girls in Enrolment				Sex Ratio			
	Primary	Middle	Secondary	Hr Sec	Primary	Middle	Secondary	Hr Sec
1	2	3	4	5	6	7	8	9
Public	52.2	52.4	53.3	55.5	1094	1100	1143	1249
Private	45.1	44.4	44.3	50.4	823	797	795	1015
Total	48.0	48.6	49.2	52.0	922	947	967	1085

Notes: Girls share in 6-17 years age population is estimated at 47.8%; sex ratio in the 6-17 years-age population is estimated at 916.

Source: Calculations based on U-DISE 2018-19

There are 475 residential schools – Kasturiba Gandhi Balika Vidyalyas (KGBV) as part of SSA activities to impart quality education to girls.

The level of education provided in these schools is now extended from elementary (VIII class/grade) to lower secondary (up to X class/grade). Further, there are number of residential welfare schools functioning in the state serving the various marginalised and socially backward classes while focusing on girl children. Also, as of now, there are 194 Model Schools functioning in educationally backward blocks (EBBs) as part of RMSA initiative and most of these schools have hostel provision for girl children.

Therefore, as the Telangana state has already achieved the gender parity, especially in school education, and is close to achieving the same in post-secondary level as well, the aim of the state is to maintain the same in school education and to improve it in the higher education. All the disabled children will be accommodated into the education system, and they will be provided with educational opportunities, across the levels of education. Further, the government of Telangana has made available five residential schools for those students who have hearing and/or visual impairments.

Universal Literacy and Numeracy

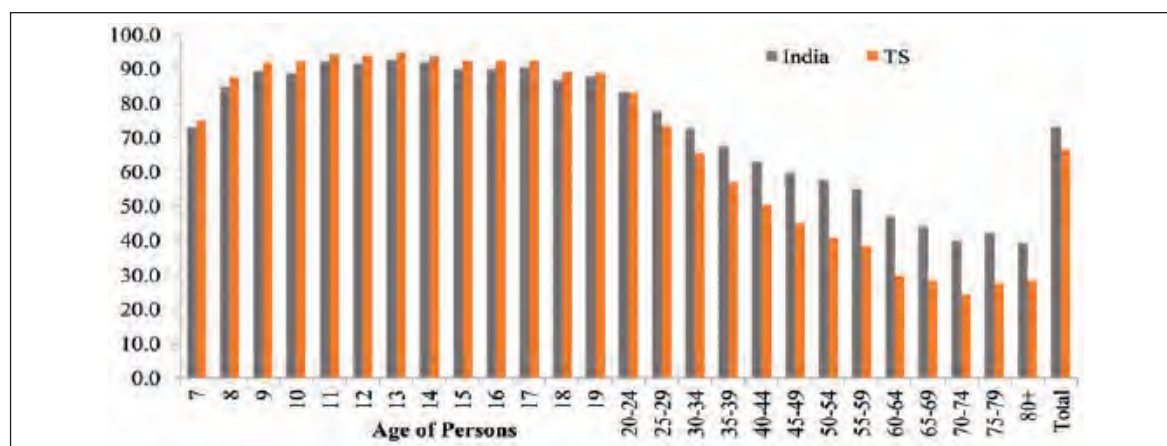
The goal of the Target 4.6 is: by 2030, ensure that all Youth and a substantial proportion of

adults, both men and women, achieve literacy and numeracy.

According to Census 2011, the literacy rate among the 7 years and above age population in the state of Telangana was 66.53 per cent while the national average was 72.98 per cent. Further, as per the estimates of second Periodic Labour Force Survey (PLFS-2) in 2018-19, the literacy rate of 7+ age population in the state was 71.5 per cent whereas the national average was 78.1 per cent. Among adult (15 years and above age) population literacy rate is further low in the state. In other words, more than one-third of adult (15+) population in the state are illiterates whereas such incidence is little above one-quarter at the national level.

Obviously, the performance of the state in this regard is below the national average. Telangana in fact stands below many other states in this respect. It is due to historical neglect of primary education from pre-independence period to till the end of 20th century. During the last three decades Telangana performance in primary education has improved remarkably, attendance rates among the younger age groups is one of the highest across India states. Therefore, the literacy rates among younger age-cohorts below 25 years of age is much better and stands above national average and above many other states. But among older population of 25 years and above age illiteracy rates in the state are one of the highest in India.

Figure 4.3 Literacy Rate in Telangana and India by Age-group, 2011



Source: Census of India.

Therefore, the state of Telangana while focusing on youth literacy, it has to concentrate on adult literacy as well. While the base value (2020) of the literacy rate among youth (15-24) is derived as 86.97 per cent, the short-term (2022), medium-term (2026) and end-term (2030) target are respective 90%, 95% and 100%. Literacy rate among the females is very low in the state, it is to be improved. While its base value (2020) is 58%, the target for the years 2022, 2026 and 2030 are respectively 65%, 70% and 75%.

Adult Education Department, which was established in 1978 to eradicate adult illiteracy, is to plan and implement the Programmes meant for eradicating illiteracy among the adults (15+ years age-group) and Continuing Education Programme to sustain literacy and furtherance of skills among the neo-literates along with creating a lifelong learning environment for them. Initially the target group was the 15-35 years age population. As part of the **National Literacy Mission** (NLM) initiated in 1988, the then state government has setup an autonomous wing of State Literacy Mission Authority to promote literacy and adult education through Total Literacy Campaign (TLC) and Post-Literacy Programme (PLP) and Continuing Education Programme (CEP³⁹). When the NLM was re-casted as **Sakshra Bharat** in 2009 for the 11th Five-Year-Plan initially and extended subsequently to *12th Five-Year Plan*, it was implemented in the then 9 districts of Telangana (which are now reorganised into 33) except Hyderabad. Government of India is replacing Sakshara Bharat with **Padhana Likhana Abhiyan**.

Along with implementing Government of India initiatives, the government of Telangana initiated a programme, **Each One Teach One**, which intended every educated person to help in educating every other illiterate person. In this regard, a survey of illiterates among the 18 years and above age population to assess the geographic spread of illiteracy in the state was conducted across Gram Panchayats during the second phase of the **Palle**

Pragathi Programme. Further, another initiative launched in 2019 on a pilot basis, is the **Student-Parent / Grand- Parent Literacy Programme** intended the students to help their illiterate parents and/or grandparents become literate.

Education for Sustainable Development and Global Citizenship

The goal of the Target 4.7 is: by 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development.

Education is the channel through which sustainable development and ideal/notion of global citizenship can be promoted. The school and college level curricula must have such content which promotes the sustainable development and global citizenship. In this respect the government of Telangana state through its nodal education department and all the other line departments or most of the department wings, is committed to ensure that all learners acquire the knowledge and skills needed to promote sustainable development and global citizenship. It requires the development academic curriculum in tune with changing needs and current trends.

Build and Upgrade Inclusive and Safe Schools

The goal of the Target 4.A is: by 2030, ensure that all children have access to safe, inclusive and effective learning environment.

The inclusiveness and safety of education of institutions is critical aspect of educational development especially in respect of school education. It can be seen in terms of making provisions for required infrastructure and facilities for inclusive participation and effective learning. Gender-specific and disability accommodative infrastructure or facilities are most critical for inclusiveness in participation. Most important are the schools with access to: a) electricity; b) digital classrooms and computers for pedagogical purposes; c) adapted infrastructure and materials

39 TLC – Total Literacy Campaign; PLP – Post Literacy Programme; CEP – Continuing Education Programme.

for students with disabilities/ disabled friendly ramp and toilets; d) basic drinking water; e) single-

sex basic sanitation facilities; and f) basic hand washing facilities.

Table 4.3 Number and Percentage of Schools in Telangana with having Required Facilities, 2018-19

Sl No	Facility	Number	%
0	Total No. of Schools	42355	100
1	Separate Room for Headmaster	17626	41.6
2	Land Available	27414	64.7
3	Electricity	39585	93.5
4	Functional Electricity	37836	89.3
5	Solar Panel	3091	7.3
6	Playground	30126	71.1
7	Library or Reading Corner or Book Bank	39154	92.4
8	Librarian	2629	6.2
9	Newspaper	16768	39.6
10	Kitchen Garden	17925	42.3
11	Furniture	34716	82.0
12	Boy's Toilet	37268	88.0
13	Functional Boy's Toilet	35920	84.8
14	Girl's Toilet	40231	95.0
15	Functional Girl's Toilet	39148	92.4
16	Toilet Facility	41531	98.1
17	Functional Toilet Facility	40582	95.8
18	Functional Urinal Boy's	28266	66.7
19	Functional Urinal Girl's	30350	71.7
20	Functional Urinal	32389	76.5
21	Functional Toilet and Urinal	31784	75.0
22	Drinking Water	39688	93.7
23	Functional Drinking Water	37800	89.2
24	Water Purifier	8160	19.3
25	Rain Water Harvesting	9796	23.1
26	Water Tested	8238	19.4
27	Handwash	35988	85.0
28	Incinerator	10615	25.1
29	WASH Facility (Drinking Water, Toilet and Handwash)	33560	79.2
30	Ramps	16371	38.7
31	Hand-Rails	7872	18.6
32	Medical Check-up	36787	86.9
33	Complete Medical Check-up	13048	30.8
34	Internet	7756	18.3
35	Computer Available	13862	32.7

Source: U-DISE 2018-19: <http://dashboard.seshagun.gov.in/mhrdreports/#/reportDashboard/sReport>

Although certain aspects of facilities like electricity, toilets and handwash are present in many schools, few still are waiting for them. All the schools supposed to have all the required facilities. Further in certain other aspects this gap is very large. For instance, around a quarter of the total schools in the state do not have functional urinals separately for boys and girls. Disabled-friendly (Ramps and Hand- Rails) set-up is missing in more than two-thirds of schools in the state. When we talk about digitalisation, two-thirds of schools in the state do not have computer and more 80 per cent of schools do not have internet connectivity.

In this regard, the government of Telangana state is committed to ensure electricity and computer infrastructure in most of the educational institutions along with basic WASH infrastructure- drinking water, washing and gender-specific sanitation facilities. More importantly it is committed to

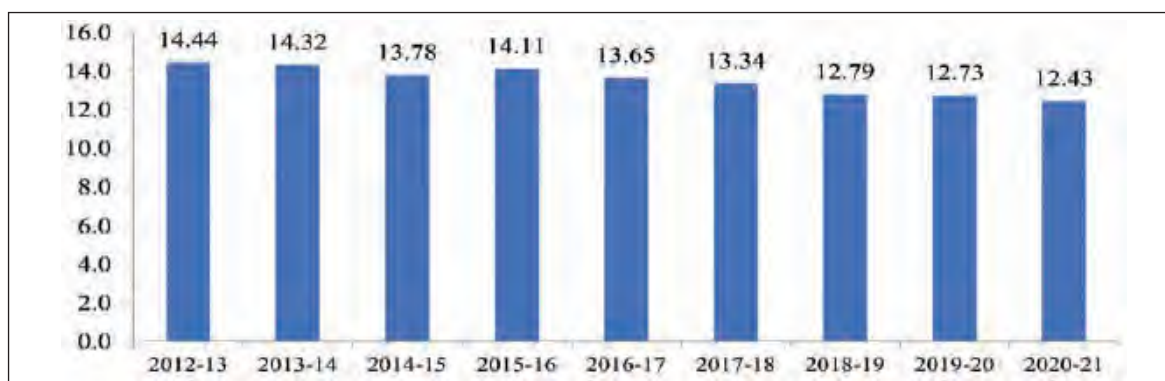
provide disable-friendly ramps and toilets in all the educational institutions.

Expand Higher Education Scholarships

The goal of the Target 4.B is: by 2030, substantially expand the number of scholarship available to all eligible students.

The government of Telangana state has been providing various types of scholarships facilitating the students belonging to different sections of society providing them opportunity for schooling and college education. There are pre- and post-matric scholarships for ST/ SC/ OBC/ Minority/ Disabled children along with the Telangana state means-cum-merit scholarships. There are around 12 to 14 lakh students in the state benefiting from post-matric scholarships provided by the state Government.

Figure 4.4 Total Number of Post-Matric Scholarships Provided by Government of Telangana (Number in lakhs)



Note: Figure represent in lakhs; Based on Registrations for Scholarships.

Source: e-pass, CGG at e-PASS:: Reports (cgg.gov.in)

The tuition-fee-reimbursement (RTF) scheme introduced in 2008 in the combined state of Andhra Pradesh is continued to date in the state of Telangana. It is providing an opportunity to students from poor and economically backward class backgrounds to pursue higher education especially technical education which was dream for many of them. Similarly, there are many other types of scholarships for students pursuing higher education abroad especially for SC/ST/OBCs

and minorities, the Mahatma Jyothiba Phule BC Overseas Vidya Nidhi scheme, Ambedkar Overseas Education Scholarship scheme for SCs/STs and Chief Minister's Overseas Scholarship Scheme for Minorities. In fact under the scheme of assistance to overseas education different socio-religious groups, 36 students belonging to SC community, 167 ST, 141 BC and 250 minority students have benefited as of 2021-21.

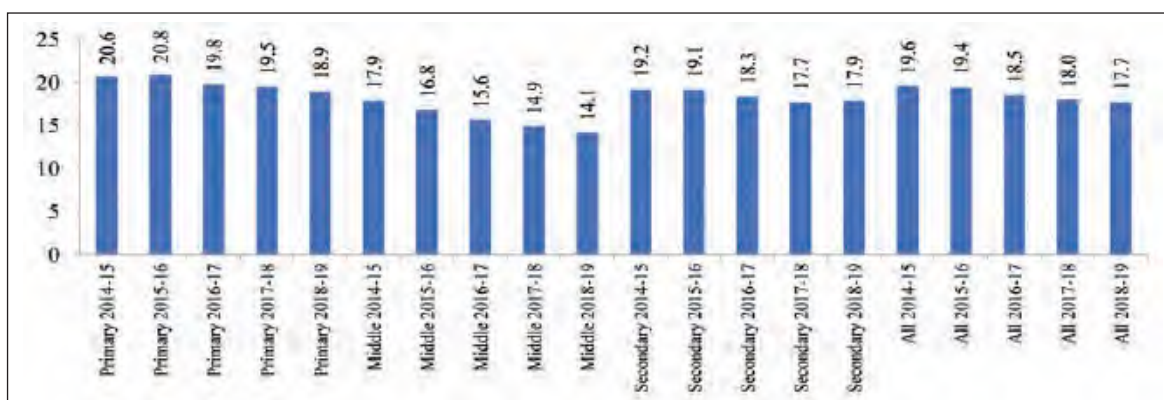
Increase the Supply of Qualified Teachers

The goal of the Target 4.C is: by 2030, substantially increase the supply of qualified teachers.

The total number of teachers available for school education (in public and private school together) in the state of Telangana is 2.6 lakhs in 2019-20.

The teacher-pupil ratio (TPR) in school education system of the state is around 26, which is on average is better than ideal ratio (40). Such TPR may vary across schools, there are some schools with TPR little higher than ideal ratio but most of the schools in the state are complying with the ideal.

Figure 4.5 Teacher-Pupil Ratio (TPR) in School Education: Telangana



Source: Department of School Education, Govt. of Telangana.

Although most of the teachers working in government schools are professionally qualified, more than two-fifths of the teachers in private schools are not so. In this respect the state is committed to maintain that all the teachers in government schools are professionally qualified, and insist on all the private schools to comply with same for ensuring quality of education. There are about 200 B.Ed colleges in the state with an intake capacity of nearly 19000 for teacher training programme and produce at least 15 thousand trained teacher graduates annually. There is no dearth of supply of qualified candidates for teaching in schools in the state.

Further, many in-service training programmes for school teachers are conducted regularly. An in-service training initiative 'Nishtha' is conducted by SCERT to update the knowledge and teaching skills of the teachers. Also, in collaboration with Confederation of Indian Industry (CII), the state government has arranged information technology related training for the government schools' teachers.

4.3 The Way Forward

To reiterate the quantitative expansion of educational institutions and coverage of eligible population (attendance) is reasonably high: more than 98 per cent of elementary school-age children (of 6-14 years age) and 94% of secondary school age (14-17 years) children in the state are attending schools, it is nearing universalization of elementary education; GER in higher education is 36%; around 41000 schools and 2500 junior colleges including more than 3000 welfare residential (including KGBVs and model schools); higher education institutions available for lakh eligible population (18-23 years age) is one of the highest in India; high intensity of technical and professional education; gender parity in school education; supporting cash transfer scheme are: Fees Reimbursement (RTF) and other Scholarships. Concerns are about the quality of education, skill developments and employability of graduates.

The concern and challenges are: quality of education at all levels (school and higher levels),

streamlining the age-specific grades and levels of education, increasing privatisation and issues of affordability, Governance in School and Higher Education and Revitalising the Public Education System.

The way forward for the state government of *Telangana in transforming the state into equitable and dynamic knowledge society with learned citizenry and skilled human resources while achieving SDG-4 by ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all* for all in the state is as follows.

- Strengthening the Anganwadi Centres (AWCs) to focus on pre-primary component of ICDS packages with appropriate training for the Anganwadi teachers and appropriate infrastructure for the same.
- Streamlining the children enrolment and attendance in age-appropriate classes/grades and age-appropriate levels of education so that the net enrolment ratio (NER) would improve.
- Continue to maintain gender parity which is already achieved in the state.
- Universalising the pre-primary to higher secondary education
- Further reducing the socio-religious group disparities in school education
- Most importantly takes measures and interventions for improving the quality of education
- Strengthening of public education system
- Increase public expenditure on education
- Continuing with Mid-Day-Meal Scheme
- Providing opportunities for Overseas Education
- Supply of Textbooks and Uniforms
- Residential Schools and Gurukulas
- Implementation of NEP 2020
- Governance in School and Higher Education

Vision, Mission, and Action Plan of Samagra Shiksha–School Education Department

Vision: The vision of the Scheme (Samagra Shiksha) is to ensure inclusive and equitable quality education from pre-school to senior secondary stage in accordance with the Sustainable Development Goal (SDG) for Education

Mission: The major objectives of the Scheme (Samagra Shiksha) are provision of quality education and enhancing learning outcomes of students; Bridging Social and Gender Gaps in School Education; Ensuring equity and inclusion at all levels of school education; Ensuring minimum standards in schooling provisions; Promoting vocationalisation of education; Support States in implementation of Right of Children to Free and Compulsory Education (RTE) Act, 2009; and Strengthening and up-gradation of SCERTs/ State Institutes of Education and DIET as a nodal agencies for teacher training.

School Education Department is responsible in providing Quality Education to its citizens and as RTE ACT 2009 says Education is our Right and that entitles all children between the ages of 6-14 years free and compulsory admission, attendance and completion of elementary education. Most importantly, it provides for children's right to an education that is free from fear, stress and anxiety.

Strategies for achieving the SDGs and related targets and indicators by 2030

- Providing 100% access to Schooling.
- Improving the infrastructure facilities.
- Adopting Child-friendly and joyful learning.
- Continuous capacity building / professional Development of staff.
- Implementation of CAL/ ICT in all Upper Primary/ Secondary schools.
- Activities to enhance Community participation and monitoring for universal access, equity and quality,
- To ensure maximum Out of School Children are enrolled in schools.

Action Plan towards achieving the vision for next 3 to 10 years (2022, 2025 and 2030)

The School Education Department is working continuously in achieving the Vision of the Scheme (Samagra Shiksha). Activities are being planned in phased manner every year to achieve the goals and objectives of Samagra Shiksha. In this process, the following action plan is proposed towards achieving the vision for next 3 to 10 years (2022, 2025 and 2030).

- It is planned to achieve 90 NER (Net Enrolment Ratio) for Primary level and 85 for Upper Primary by 2030 against 82.6 and 65.42 current achievements respectively. The adjusted NER currently is 92.21 and 79.39 at Primary and Upper Primary Level respectively which is planned to achieve to 99 and 87 respectively by 2030.
- The current achievement of schools with separate toilet facility for girls is 92% and it is planned to achieve 98% by 2030. The annual average drop-out rate (I-X Grades) is 4.29% and it is planned to minimize it to 2 % or even less by 2030.
- It is planned to improve all the infrastructure facilities in terms of access to electricity; computers for pedagogical purposes; adapted infrastructure and materials for students with disabilities/ disabled friendly ramp and toilets; basic drinking water; single-sex basic sanitation facilities; and basic hand washing facilities to 98%-99% and to 100% wherever possible by 2030.
- It is planned to reduce the out of school children by 0.001 by 2030 as against 0.002 of current achievement at elementary level.
- It is planned to increase the Enrolment ratio of children with disabilities to 95% by 2030 as against current achievement of 87%.
- The current achievement of Proportion of students enrolled in Grade 1 who reaches last grade at primary level is 84%, Upper Primary level is 71% and Secondary level is 65% and aimed to improve it to 99%, 85% and 80% respectively by 2030.
- With regular review of the activities, the action plan can be modified wherever necessary according to the dynamic situations that arise with time and thus can move towards achieving the vision of the Samagra Shiksha.

Annexure 4.1 Targets and Indicators for SDG 4

Target	National Indicator (NIF)	State Indicator (SIF)	Baseline	Target 2022	Target 2025	Target 2030
1	2	3	4	5	6	7
1.a : Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions	1.a.2 : Proportion of total government spending on essential services (education, health and social protection)	1.a.2. Proportion of total government spending on essential services (education) (DSE ACCOUNTS)	119.38 % expenditure incurred i.e. 19.38 % over the actual allocation due to teachers salaries			
4.1: By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes	4.1.1: Net Enrolment Ratio in primary and upper primary Education	4.1.1. Net Enrolment Ratio in primary and upper primary education (TSS)	82.86	85	88	90
			65.42	70	80	85
	4.1.2: Adjusted Net Enrolment Ratio in primary, upper primary and secondary education	4.1.2. Adjusted Net Enrolment Ratio in primary, upper primary and secondary education (TSS)	92.21	94.21	96.21	99
			79.39	81.39	83.39	87
	4.1.3: Gross Enrolment Ratio in higher secondary education	4.1.3. Gross Enrolment Ratio in higher secondary education (H.E)				
	4.1.4: Percentage of students in grade 3, 5, 8 and 10 achieving at least a minimum proficiency level in terms of nationally defined learning outcomes to be attained by pupils at the end of each of above grades	4.1.4. Percentage of students in grade 3, 5, 8 and 10 achieving at least a minimum proficiency level in terms of nationally defined learning outcomes to be attained by pupils at the end of each of above grades (SCERT)				
	4.1.5: Gross intake ratio to the last grade (primary, upper primary and secondary)	4.1.5. Gross intake ratio to the last grade (primary, upper primary and secondary) (TSS)				
	4.1.6: Proportion of students enrolled in Grade 1 who reaches last grade or primary/upper primary/secondary levels	4.1.6. Proportion of students enrolled in Grade 1 who reaches last grade or primary/upper primary/secondary levels (TSS)	0.84	0.86	0.88	0.99
			0.71	0.81	0.83	0.85
			0.65	0.68	0.7	0.8

Target	National Indicator (NIF)	State Indicator (SIF)	Baseline	Target 2022	Target 2025	Target 2030
1	2	3	4	5	6	7
	4.1.7: Out of school ratio (primary, upper primary, elementary, secondary and higher secondary)	4.1.7. Out of school children ratio (primary, upper primary, elementary, secondary and higher secondary) (TSS)	0.001	0.0008	0.0005	0.0003
			0.002	0.0015	0.0012	0.001
			0.002	0.0015	0.0012	0.001
	4.1.8: Number of years (i) free and (ii) compulsory education guaranteed in legal Frameworks	8 Years. Age group of 6-14 Years				
4.2: By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education	4.2.1: Participation rate in organized learning one year before official primary entry	4.2.1. Participation rate in organized learning one year before official primary entry (W.C.D)				
	4.2.2: Gross early childhood education enrolment ratio	4.2.2. Gross early childhood education enrolment ratio (W.C.D)				
4.3: By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	4.3.1: Participation rate of youth and adults in formal and non- formal education and training in the previous 12 months	4.3.1. Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months (ADULT EDUCATION)				
	4.3.2: Proportion of male-female enrolled in higher education, technical and vocational education	4.3.2. Proportion of male-female enrolled in higher education, technical and vocational education (H.E/T.E/V.E)				
	4.3.3: Gross enrolment ratio for tertiary Education	4.3.3. Gross enrolment ratio for tertiary education				
4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	4.4.1: Proportion of computer literate adults	4.4.1. Proportion of computer literate adults *				

Target	National Indicator (NIF)	State Indicator (SIF)	Baseline	Target 2022	Target 2025	Target 2030
1	2	3	4	5	6	7
4.5: By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations	4.5.1: Enrolment ratio of children with disabilities	4.5.1. Enrolment ratio of children with disabilities (TSS)	0.87	0.88	0.9	0.95
	4.5.2: Gender Parity indices for Primary/Secondary/Higher Secondary/Tertiary education.	4.5.2. Gender Parity indices for Primary / Secondary / Higher Secondary/Tertiary Education (TSS)	0.99	0.8	0.6	0.5
			1.03	1	0.9	0.7
			1.16	1.1	1	0.8
4.6: By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	4.6.1: Literacy rate of youth in the age group of 15-24 years.	4.6.1. Literacy rate of youth in the age group of 15-24 years. (ADULT EDUCATION)	-	90%	95%	100%
4.a: Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non- violent, inclusive and effective learning environments for all	4.a.1: Proportion of schools with access to: (a) electricity; (b) computers for pedagogical purposes; (c) adapted infrastructure and materials for students with disabilities/ disabled friendly ramp and toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic hand washing facilities (as per the WASH indicator definitions)	4.a.1. Proportion of schools with access to: (a) electricity; (b) computers for pedagogical purposes; (c) adapted infrastructure and materials for students with disabilities/ disabled friendly ramp and toilets; (d) basic drinking water; (e) single-sex basic sanitation facilities; and (f) basic hand washing facilities (as per the WASH indicator definitions) (TSS)	0.93	0.94	0.95	0.98
			0.578	0.6	0.8	0.9
			0.39	0.5	0.7	0.9
			0.25	0.5	0.7	0.9
			0.94	0.95	0.96	0.98
			0.91	0.93	0.95	0.99
			0.96	0.97	0.98	0.99
			0.57	0.6	0.7	0.99
4.c: By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States	4.c.1: Proportion of trained teachers, by education level (pre- primary, primary, upper primary, elementary, secondary and higher secondary education)	4.c.1. Proportion of trained teachers, by education level (pre- primary, primary, upper primary, elementary, secondary and higher secondary education) (SCERT)				
	4.c.2: Pupil/trained teacher ratio by education level					

Target	National Indicator (NIF)	State Indicator (SIF)	Baseline	Target 2022	Target 2025	Target 2030
1	2	3	4	5	6	7
		Adult literacy rate (ADULT EDUCATION)				
		Annual Average Dropout Rate – Primary (%) (TSS)	1.92	1.7	1.5	1
		Annual Average Dropout Rate - Secondary Education (%) (TSS)	13.47	11.47	9	5
		Annual Average Dropout Rate - Upper Primary (%) (TSS)	2.86	2.5	2	1
		Available of teritary institute seats per 1000 students (TSS)				
		Average Annual Drop-out rate (TSS)	4.29	4	3	2
		Density of primary schools per ten square km (TSS)				
		Density of upper primary schools per ten square km (TSS)				
		Drop out ratio at elementary level (Boys/girls/SCs/STs/Minorities) (TSS)	0.02	0.015	0.1	0.005
			0.02	0.015	0.1	0.005
			0.01	0.005	0.003	0.002
			0.06	0.05	0.04	0.03
			0			
		Drop out ratio at primary level (Boys/girls/SCs/STs/Minorities) (TSS)	0.02	0.015	0.1	0.005
			0.02	0.015	0.1	0.005
			0.01	0.005	0.003	0.002
			0.06	0.05	0.04	0.03
			0			
		Drop out ratio at Upper- primary level (Boys/girls/SCs/STs/Minorities) (TSS)	0.03	0.02	0.01	0.005
			0.03	0.02	0.01	0.005
			0.02	0.015	0.1	0.005
			0.05	0.04	0.03	0.02
			0.01	0.005	0.003	0.002
		Gross enrolment in higher Education (%) (TSS)				
		Gross Enrolment Ratio (GER) - All (Primary) (%) (TSS)	98.35	98.5	99	99.99
		Gross Enrolment Ratio (GER) - All (Secondary Education) (%) (TSS)	87.08	90	92	95
		Gross Enrolment Ratio (GER) - All (Upper Primary) (%) (TSS)	88.11	90	92	95
		Gross Enrolment Ratio (GER) – Primary for Boys (%) (TSS)	98.97	99	99.2	99.8
		Gross Enrolment Ratio (GER) – Primary for Girls (%) (TSS)	97.67	98.5	99	99.5
		Gross Enrolment Ratio (GER) - Secondary Education for Boys (%) (TSS)	85.81	87.81	90	95

Target	National Indicator (NIF)	State Indicator (SIF)	Baseline	Target 2022	Target 2025	Target 2030
1	2	3	4	5	6	7
		Gross Enrolment Ratio (GER) - Secondary Education for Girls (%) (TSS)	88.44	90	94	98
		Gross Enrolment Ratio (GER) - Upper Primary for Boys (%) (TSS)	87.54	89.54	93	98
		Gross Enrolment Ratio (GER) - Upper Primary for Girls (%) (TSS)	88.72	90	94	98
		Habitations Access To Upper Primary School Within The Radius Of 3 km (%) (TSS)	94			
		Habitations Having Access to High School Within The Radius of 5 km (%)	100			
		Habitations Having Access To Primary School Within The Radius Of 1 km (%) (TSS)	98.2			
		Literacy rate among women (%) (ADULT EDUCATION)	(26120) Women non-literates were made literates	65%	70%	75%
		Literacy rate (< 15 age) (ADULT EDUCATION)	44972 Adult Non-Literates were made literates	70%	75%	80%
		Mid-Day Meal per head (No.)-dialy (MDM)	1) 100grs per head to the students of I to V,			
			Cooking Cost Rs 4.97/- per head/ per student. 2) 150 gms per head to the students of VI to X classes, 3) Cooking Cost of Rs 7.45/- per head/ per student.			
		NAS Indicators to be added for learning outcomes (TSS)				
		NER in Primary (General/SC/ST/ Girls/Minority) (TSS)	82.86	85	88	90
			88.22	90	92	95
			75.62	78	82	90
			82.26	85	88	90

Target	National Indicator (NIF)	State Indicator (SIF)	Baseline	Target 2022	Target 2025	Target 2030
1	2	3	4	5	6	7
		NER in upper primary (General/SC/ST/ Girls/Minority) (TSS)	65.42	70	80	85
			67.24	70	80	85
			60.86	65	70	75
			65.7	70	80	85
		Percentage of children (SC/ST/ Minorities) covered by scholarships pre matric (WELFARE)				
		Percentage of children in the primary and upper primary covered under MDM (MDM)	Primary - 87.91% Upper Primary - 87.01%			
		Proficiency in Math & language at class 5 and 8 (National Achievement Survey NCERT) (SCERT)				
		Schools With Functional Toilet (No.) (Boys) (TSS)	87.32	90	95	99
		Schools With Functional Toilet (No.) (Girls)(TSS)	95.16	97	98	100
		Student Teacher Ratio (TSS)	01:25.5			

Sustainable Development Goal - 5

Achieve Gender Equality and Empower All Women and Girls



Vision

Marching Ahead on Gender Equality

The vision of Telangana State towards the development and welfare of the women and girls is reflected in various initiatives it has taken in the areas of safety and security, education, economic and political empowerment and health. SHE Team, BHAROSA, Sakhi Centres, Skill Development, SHG-BLP, Kalyana Lakshmi, Shadi Mubarak, Women Welfare Centers, the State Commission for Women, KCR kits, Health-Hygiene kits for girl students etc., are some of the important initiatives of the state government to bring attitudinal changes about women in the society and work towards achieving gender equality in every aspect. The Government is striving to improve outcomes for women through centrally-assisted flagship schemes such as Mahila Shakti Kendras (MSKs), the Scheme for Adolescent girls (SABLA), and the Integrated Child Development Services (ICDS). Thus, through these varied programmes at different levels of life cycle the state government is adopting a holistic approach towards development of women and girls.

Achievements

- Sex ratio at birth in the state is higher than all-India
- Rapid decline in infant mortality among girls and the equal distribution of live births by order of birth for both girls and boys in the state indicate a positive trend towards achieving a high child sex ratio by 2030
- Nalgonda, Nagarkurnool and Rangareddy districts have the highest number of rural mandals (288) and Hyderabad and Medchal have highest number of urban mandals (79) with child sex ratio less than 940, the state average
- The mean age at marriage in the state for girls increased to 19.8 years during 2012-13 as compared to 19.2 years during 2007-08
- The percentage of currently married women aged 20-24 who were married before the legal age of 18 years declined to 23.5 during 2019-20 from 26 during 2015-16 and from 28 percent during 2012-13
- 44.8 percent women in the age group 15-59 years participated in paid work in Telangana as against 20 percent at all-India during 2019
- 50.7 percent of women elected as representatives of PRIs. The female labour force participation rate (FLFPR) is higher in the state (30.8) than all-India (18.6). Though FLFPR is declining in the state, the current rates have shown an improvement both in rural and urban areas
- The share of women in total workers participated in MGNREGA has improved marginally from 57 percent in 2015-16 to 58 percent in 2019-20 and the state ranked sixth next to Kerala, Tamil Nadu, Rajasthan, Himachal Pradesh and Punjab
- 37.3 percent of informal enterprises are owned by female
- In rural areas the share of female proprietary enterprises has gone up to 47.6 percent
- Most of the units are low productive and low remunerative
- The Telangana State Women Cooperative Development Corporation is a key player in capacity-building of rural women

- To promote women entrepreneurship, the Government of Telangana launched WE Hub
- The percentage of women in the reproductive age (15-49 years) using contraceptives increased from 57 percent in 2015-16 to 68 percent in 2019-20
- The unmet needs of the women, declined from 7.4 in 2015-16 to 6.4 in 2019-20.
- The share of women in total land holdings increased from 21.5 to 23 percent and in total area from 19.6 to 22.4 percent during the period 2010-11 – 2015-16
- Female wage for casual labour consists of 81 percent of men's wage. The improvement in female wages is more in the case of non-agriculture as compared to that of agriculture labour
- SHG Bank Linkage Programme (SHG BLP) played a major role in making credit access to unbanked rural women and reducing gender gap in access to financial services
- The exclusive women SHGs-BLP (5.47 lakhs) constitute 96 percent of total SHGs (5.69 lakhs) in Telangana
- The parameters such as the number of exclusive women SHGs, amount of loan disbursed and the amount of loan outstanding have shown positive growth during the period 2017-18 to 2019-20 SHG BLP has put more emphasis on financial aspects rather than social aspects of the programme
- The state holds a leading position in IT and ITeS in the country in terms of production and exports. The share of women in IT and ITeS sector workers increased from 5 percent in 2011-12 to 25 percent during 2018-19. Skill development initiatives need to be strengthened to increase the employability of women

Challenges

According to UN Secretary-General António Guterres, COVID-19 pandemic has reversed the progress that has been made towards gender equality. The pandemic further worsens the existing gender inequalities in health, security and social protection. During the lockdown the women's unpaid work has increased. Since majority of women work in informal sector which puts them into risk of falling into poverty. The violence against women and girls increased during the lockdown period. TISS report shows in Telangana 89 percent of total cases reported were that of domestic violence cases during the month of April 2020. The incidence of crimes against women and girls has been rising in the state and Hyderabad is the second city in the country with the highest number of domestic violence cases. Domestic violence and dowry harassment cases constituted a major proportion of complaints lodged. Though there is a decline in the percentage of women experienced physical and sexual violence by husband, the state stands third highest in the country. Still 43 percent of women in rural Telangana have experienced physical and sexual violence by husband during 2019-20. There are constitutional protection for domestic violence but there is no such protection against marital rape in the country. There is a legal protection against gender discrimination only in terms of hiring but not in the payment of equal wages. Even if the same rate of decline will continue it is less likely to achieve the target of 10 percent by 2030. The number of cases reported under the Prohibition of Child Marriage Act, 2006 in Telangana state has been increasing continuously. The difference in the paid work participation of women between rural and urban areas is visible in the state as only 30 percent of urban women and 56 percent of rural women participated in paid work. The time spent by women in unpaid domestic work is 8.5 and 7.8 times higher than men in rural and urban areas respectively. The proportion of time spent on unpaid activity per day per person is estimated at 18.5 percent for females as against 2.3 percent for males. This is the reason for men getting more time

for self-care and maintenance. The quality of life i.e. time poverty creates not only stress and fatigue but also creates material poverty which reduces the quality of goods and services produced through unpaid activities

5.1 The Context

Women Exploitation, A Way of Life

Women, at every stage of their life cycle and in every aspect of life, encounter different forms and degrees of discrimination. They are the main victims of poverty though they contribute equally in household production and its maintenance. Women with varied levels of economic and educational status and holding positions of political and managerial and without such an authority face different degrees of exploitation. Thus, it appears that the word women empowerment need not necessarily go with income, education and power. What is required is execution power, attitudinal change towards women in the society along with a strong legal support. Moreover, women themselves should strive to achieve their rights.

Way back in 2000 by signing the Millennium Declaration, the United Nations member states are committed to achieve eight Millennium Development Goals (MDGs) by 2015. The MDG 3 aims to promote gender equality and empower women. The time period to achieve the MDGs has crossed and the performance of the nations towards achieving gender equality shows that there has been progress in some of the indicators and while there are gaps in some and also certain factors hindering the progress of all the indicators⁴⁰. The targets and indicators of MDG 3 have been criticised as narrow and neglected gender specific risks and vulnerabilities (Buvine et al. 2008 and Jhamb and Sinha, 2010 as cited in Buch, 2016). It is argued that there is no correlation between these indicators and gender equality. There are gender specific barriers to school attendance of girls and

adolescents besides barriers they share with other groups in general (Buch, 2016)⁴¹.

Sustainable Development Goals (SDGs) and SDG 5

The Sustainable Development Goals (SDGs) build upon the Millennium Development Goals (MDGs) that share a universal common global vision of progress to a safe, just and sustainable space for all human beings. There are 17 SDGs and among them SDG 5 is committed to achieve *gender equality and empower all women and girls*. MDG 3 had only one target that focused on education while SDG 5 has number of targets aims to end discrimination, violence; recognise unpaid domestic work and participation in decision making, universal access to reproductive health and reproductive rights. Since SDG 5 is both a cross cutting as well as goal in its own, some of the targets overlap with targets in other goals that mention the gender aspect. None of the targets of this goal are time bound. The word 'all' in the goal definition denotes the challenges faced by the marginalised communities. There are six targets under SDG 5 with 16 indicators, besides there are 5a, b, c reflecting the means of implementing legal reforms and technology. However, there is no mention of funding which was found to be a serious stumbling block in achieving MDG 3 (Buch, 2016). Further, cultural norms, practices and individual behaviour which are more personal and private pose challenges in the implementation of MDG 3 (Szekely, 2008 as cited in Buch, 2016). The same is also applicable to SDG5.

Gender Equality-Global Scenario

In 1995, the nations of the world adopted the Beijing Declaration and Platform of Action, the most comprehensive global agenda for the achievement of gender equality. According to UN

40 Millennium Development Goals in Telangana- 'precursor of Sustainable Development Goals, CESS, 2015

41 <http://ris.org.in/sdg/india-and-sustainable-development-goals-way-forward-> Chapter 3-Gender Equality: Achievements, Gaps, Future Challenges and Implementation Framework to be adopted by India- Nirmala Buch

Secretary-General António Guterres, no country has achieved gender equality and COVID19 pandemic has reversed the progress that has been made towards it. Globally, men outnumber women at birth while women outnumber men in older ages and these population patterns affect the life of both men and women. Increased education and employment opportunities increased the average age at marriage for women to 23 years. However, marriage before 18 years among girls still exists in many regions of the world. Over the past 25 years (1995 to 2020) the gender gap in labour force participation rate remained constant at 27 percentage points in the world. In Southern Asia, Northern Africa and Western Asia, women's participation in labour market is below 30 per cent. The unequal distribution of domestic work restricts women's participation in paid work. The proportion of youth who are not in employment, education and training (NEET) is 31 percent among women as against 14 percent among men. Across the world, around one third of women face physical and sexual violence by intimate partners. Significant progress has been noticed in the area of maternal health. Due to women reservations, their participation in political sphere has increased. Worldwide, women held 36 percent of elected seats in local bodies which is higher than their level of representation in the national parliaments. Thus, the performance of gender equality at various spheres is not encouraging across the world. The outbreak of corona virus further widens the existing inequalities in health, income and security and social protection⁴². Only 13 countries in the world have met the criteria of having the publicly available gender budget data (Niti Aayog, 2019-20)⁴³.

The recently released Global Gender Gap Report 2021 by World Economic Forum has stated that it will take 135.6 years to close the gender gap

worldwide⁴⁴. The Global Gender Gap index tracks the progress over time towards reducing the gender-gaps in four key dimensions such as Economic Participation and Opportunity, Educational Attainment, Health and Survival and Political Empowerment. The report stated that South Asia is one of the worst performing regions, followed only by the Middle East and northern Africa. India is one of the worst performers of the region with a rank of 112. Bangladesh ranked 65, Nepal 106, Pakistan 153, Afghanistan 156, Bhutan 130 and Sri Lanka 116.

Gender Equality-All-India

Gender inequality is a persistent feature of any nation of the world and remains the main barrier to human development. India ranks at low 123 of 162 countries in Gender Inequality Index (GII) as per the UNDP Human Development Report, 2019⁴⁵. The GII indicates low economic and political participation of women in India. Women occupied only 11.9 per cent of parliament seats in the country and over 14 year period (2000 -2014) the share of women increased by 3.8 percentage points. The secondary education completion rate among adult women is 39 per cent as against 63.5 per cent of males. The female participation in labour market is only 23.6 per cent as against 78.6 per cent for men⁴⁶.

According to the World Economic Forum's Global Gender Gap Index, the rank of India slipped to 140 in 2021 from 112 in 2020. The report stated that India has closed 62.5 percent of its gender gap. Declining share of women among ministers and stagnant share of women in parliament, declining women's labour force participation and low and declining share of women in professional and technical roles and wide gaps in sex-ratio at birth were the reasons for drop in India's rank.

42 <https://worlds-women-2020-data-undesa.hub.arcgis.com/>

43 NITI Aayog –SDG India Index and Dashboard-2019-20

44 http://www3.weforum.org/docs/WEF_GGGR_2021.pdf

45 Low rank indicates high inequality

46 <http://hdr.undp.org/sites/default/files/hdr2019.pdf> accessed on 11-18-2020

Equal participation of women in the economic development of the country is the precondition for the advancement of not only for themselves but also for the country. According to the IMF estimates that equal participation of women in the workforce will increase India's GDP by 27 percent. Various legislations, policies and programmes have

been initiated to ensure women and girls equal access to education, health, food security, economic assets, skill development and employment. The government implements various programmes for combating all forms of discrimination and violence against women.

5.2 SDG 5 -Targets and Indicators

Table 5.1 State Indicator Framework for SDG 5- Gender Equality

Target	Indicator
5.1 End all forms of discrimination against women and girls everywhere	5.1.1 Sex Ratio at Birth 5.1.2 Child Sex Ratio 5.1.3 Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex
5.2 Eliminate all forms of violence against all women and girls in public and private spheres, including trafficking and sexual and other types of exploitation	5.2.1 Percentage of ever married women age 15-49 years who have ever experienced physical or sexual violence committed by their husband 5.2.2 Rate of crimes against women per 100000 women population 5.2.3 Proportion of sexual crimes against girl children to the total crimes against children 5.2.4 No. of One Stop Centres (Sakhi Centres) 5.2.5 No. of Swadhar homes
5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilations	5.3.1 Proportion of women aged 20-24 years who were married or in a union before age 5.3.2 Proportion of cases reported under the Prohibition of Child Marriage Act (early marriage of children below 18 years of age) to total crime against children
5.4 Recognise and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies, and the promotion of shared responsibility within the household and the family as nationally appropriate	5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location
5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision making in political, economic and public life	5.5.1 Percentage of seats held by women in National Parliament and in State Legislature 5.5.2 Female labour force participation rate 5.5.3 Percentage of non-agricultural proprietary establishments owned by women
5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the ICPD and the Beijing Platform for Action and the outcome documents of their review conferences	5.6.1 Percentage of women using modern method of Family Planning 5.6.2 Unmet need for family planning for currently married women aged 15-49 years 5.6.3 Proportion of population aged 15-49 years with comprehensive correct knowledge of HIV / AIDS

Target	Indicator
5.a: Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources in accordance with national laws	5.a.1 Operational land holdings - gender wise 5.a.2 Proportion of female agricultural labourers 5.a.3 Wages of casual labourers (gender wise) 5.a.4 Agricultural wages (gender wise) 5.a.5 Exclusive women SHGs in Bank linked SHGs
5.b: Enhance the use of enabling technologies, in particular ICT, to promote women's empowerment	5.b.1 Percentage of women employed in IT and ITeS industry
5.c: Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	5.c.1 Having Gender Budget Cell

A. Status of Gender Equality in Telangana since the Millennium

The performance of the state with respect to gender equality is examined through the length of performance achieved toward MDGs⁴⁷. Since MDG 3 (Promote Gender Equality and Empower Women) has only one target that aims at elimination of gender disparity in primary and secondary education, two more targets were added in 2005 – full and productive employment and decent work for all to MDG 1 (Eradicate Extreme Poverty and Hunger) and access to reproductive health to MDG 5 (Improve Maternal Health). A cursory look at the performance of the State with regard to these targets shows that gender parity is unfavourable to girls at the secondary level of education during the period 2011-12. However, the current situation was reverse as the gender parity index turned out unfavourable to girls at the primary level (1.32) while it was favourable at the upper primary level (-1.34) during the period 2018-19. Further, the annual dropout rates for the year 2019-20 among secondary school children is recorded as 14.03 for boys and 10.61 for girls. Declining child sex ratio and delay in girls' entry into the school education could be the reasons for the unfavourable gender parity in the primary level.

Youth literacy among female is another indicator of gender equality which has shown a promising

improvement over the period 2011-12 to 2018-19. However, the quality of education, vocational and technical skills and employability of the educated are the main challenges to reap the benefits of improved girls' literacy.

The progress was not encouraging in the attainment and equality of wages between men and women and political participation of women in the state legislature and national parliament. Availability of health facilities within the reach, poor quality of health care, the non-availability of health professionals and the need for post-natal care are the important challenges to achieve the target-access to reproductive health care. Further, the percentage of adolescent pregnancies is also high in the state. Considerable attention is required towards providing universal access to reproductive health care in order to achieve the reduction in maternal mortality and morbidity.

Since the time period to achieve MDGs is crossed and still there are gaps, SDGs are set to continue the journey of MDGs towards the goal of the attainment of equal society. Eight indicators have been identified to measure India's performance towards the SDG 5 of Gender Equality. These indicators are related to four out of the nine SDG targets for 2030. Index Score for Goal 5 ranges between 26 and 52 for States. Himachal Pradesh, Kerala and Jammu belong to the category of Performers (with Index score between 50 and 65).

47 Millennium Development Goals in Telangana- 'precursor of Sustainable Development Goals, CESS, 2015

All other States fell behind in the Aspirants category (with Index score less than 50) and Telangana scored the least among the States and UTs (NITI Aayog, 2019-20). The lowest score for Telangana is attributed to the high rate of spousal violence and crimes against women and girls, gender wage inequality and less proportion of women elected

representatives to state assembly among the chosen indicators (Table 5.2). Thus, the analysis of the performance of Telangana towards gender equality since the Millennium Declaration shows that a greater proportion of women in the state are exposed to economic and political discrimination and domestic violence.

Table 5.2 Rank of Telangana among States and UTs on SDG 5 Indicators

Indicator	Rank of Telangana
Sex ratio at birth	14
Female to male ratio of average wage/salary earnings received during the preceding calendar month among regular wage/salaried employees (rural + urban)	32
Rate of crimes against women per 1,00,000 women population	33
Percentage of ever married women who have ever experienced spousal violence	35
Proportion of sexual crimes against girl children to total crimes against children during the calendar year	29
Percentage of seats won by women in the general elections to state legislative assembly	21
Female labour force participation rate (LFPR)	7
Operational land holdings gender-wise	5
Overall	36

Note: Higher the rank lower the performance

Source: Table 5.1, NITI Aayog –SDG India Index and Dashboard-2019-20

B. Vision of the State and Targets of SDG 5

Gender equality is enshrined in our Constitution and all the States are empowered to adopt measures towards this goal⁴⁸. After the State formation on 2nd June 2014, the Government of Telangana State has taken various initiatives to accelerate economic growth, build/improve infrastructure and to design programmes for social welfare and inclusive development towards achieving the vision of **Bangaru Telangana**. The Government is also implementing 33.33 percent reservation for women in admissions in educational institutions and public sector recruitment. Similarly, under the newly legislated local bodies' acts, 50 percent

reservations have been provided for women. The Department of Women Development and Child Welfare, the Department of Scheduled Caste Development, Tribal Welfare, BC Welfare and Minority Welfare are the lead departments concerned with regard to the fulfilment of SDG 5- Gender Equality. The various existing state government programmes working towards Goal 5 are Integrated Child Development Service (ICDS), Girl Child Protection Scheme, Kalyan Lakshmi/Shaadi Mubarak, ASARA pensions for widows, Aarogya Lakshmi, Economic Assistance to Beedi workers, SERP-TRIGP, Land distribution, SHG bank linkage, Sthree Nidhi, Safety and Security of Women (She teams), Pension scheme for single/destitute women (Table 5.4)⁴⁹.

48 http://mospi.nic.in/sites/default/files/reports_and_publication/cso_social_statices_division/Constitutional&Legal_Rights.pdf accessed on 11-11-2020

49 <http://niti.gov.in/writereaddata/files/Telangana.pdf> accessed on 11-11-2020

Table 5.3 Vision and Mission of the State towards SDG 5

Vision of the State	SDG 5Targets	Mission of the State Central/State Acts, Schemes and Programmes
Girl Child Protection To ensure that every child is born healthy and grows and thrives to realise his / her full potential To prevent gender-based sex selective elimination To ensure survival and protection of girl child To ensure education and participation of girl child	5.1 End all forms of discrimination against all women and girls everywhere	Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994 (PC&PNDT).
		Integrated Child Development Services (ICDS) Scheme
		Special Newborn Care Units (SNCU)
		Nutrition Rehabilitation Centres (NRCs).
		Kangaroo Mother Care (KMCs)
		Beti Bachao Beti Padhao (BBBP)
Providing a totally safe and secure environment for women with in larger concept of friendly policing To provide integrated support to women and children who have been subjected to severe abuse, be it physical, sexual, financial or emotional To allow women to lodge complaints against domestic violence, sexual harassment, dowry cases, eve teasing in public places/work places Preventing the trafficking of women and children To review the safeguards provided by law to children	5.2 End all violence against and exploitation of all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation	'SHE' Teams
		BHAROSA
		Sakhi One Stop Centres (OSC)
		Swadhar Homes
		Juvenile Justice (Care and Protection of Children) Act, 2015
		Protection of Children from Sexual Offences Act, 2012
		Women Helpline (WHL-181)
		Ujjwala
		SHE-Taxi
		Women Safety Wings
		Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013
		Local Complaints Committees (LCCs)
		T-SHE box
To prevent child marriages To bring all child protection systems under one roof	5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation	Child Rights Act, 2005
		State Commission for Protection of Child Rights
		Bal Raksha Bhavans
		District Child Protection Units
		Prohibition of Child Marriage Act

Vision of the State	SDG 5Targets	Mission of the State Central/State Acts, Schemes and Programmes
To achieve full and productive employment and decent work for all women and men and to ensure equal access for all women and men to affordable quality technical and vocational education and to substantially reduce the youth not in employment, education or training by 2030. Increasing the proportion of women as elected representatives Empower rural women through awareness generation, training and capacity-building measures	5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate and 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	Mahatma Gandhi National Rural Guarantee Scheme (MGNREGS)
		Self Help Groups (SHGs)
		Stree Nidhi
		Mahila Shakti Kendra (MSK)
		Pradhan Mantri Mahila Sashaktikaran Yojana (PMMSY)
		Aasara Scheme
		Single Women Pension Scheme
Good health of the 'Mother and Child'	5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences	Kalyan Lakshmi/Shadi Mubarak
		KCR Kits
		Mid Wife training course
		Amma Vadi
		Janani Sisu Suraksha program (JSSK)
		Aarogya Laxmi
		POSHAN Abhiyaan

Gender Equality

Target 5.1: *End All Forms of Discrimination Against All Women and Girls Everywhere*

Indicator 5.1.1: Sex Ratio at Birth

Sex ratio at birth in Telangana is higher than all-India during the period 2014-16 to 2016-18. However, these ratios in urban areas are lower than all-India. Among the South Indian States, the performance of the States is lowest especially in urban areas. However, the rate of improvement

in sex ratio at birth is higher in urban as compared to rural areas in the state (Figures 5.1 and 5.2). Declining sex ratio at birth in rural areas and low sex ratio at birth in urban areas are the serious concerns in the achievement of the Target 5.1 for the state of Telangana.

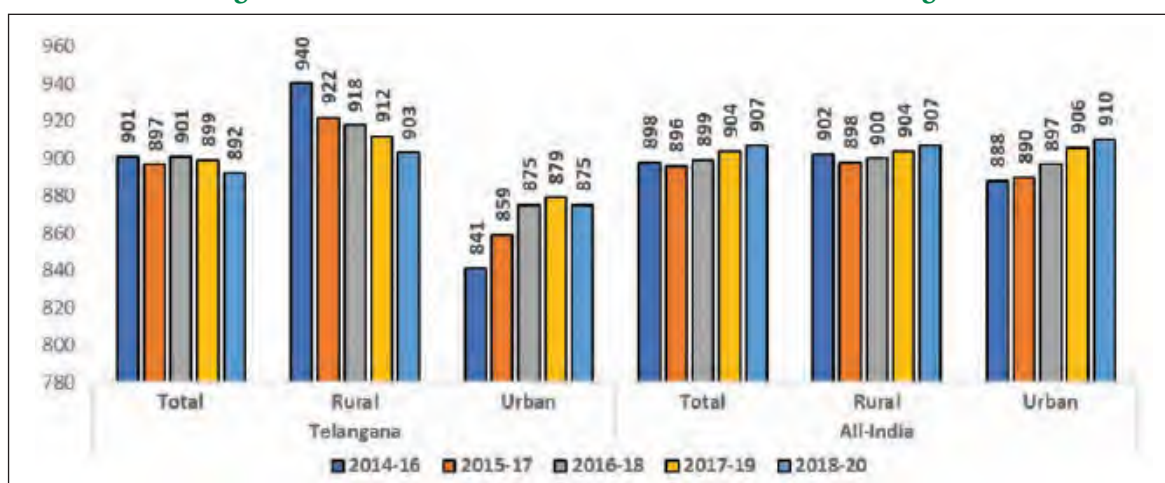
The Report of the Technical Group on Population Projections⁵⁰ estimated the sex ratio at birth for major states of India. According to the Report, the sex ratio at birth in Telangana State will be 913, 928 and 943 in 2021, 2026 and 2031 respectively

⁵⁰ Population Projections for India and State 2011-2036, November 2019, National Commission on Population, Ministry of Health and Family Welfare, New Delhi

and the rate of increase is around 3 points per year. However, the rate of increase as per SRS data between 2015-17 and 2016-18 for the state is 4 points overall, declined by 4 points in rural areas and improved by 16 points in urban areas. If the declining ratio in rural areas is checked and the rate

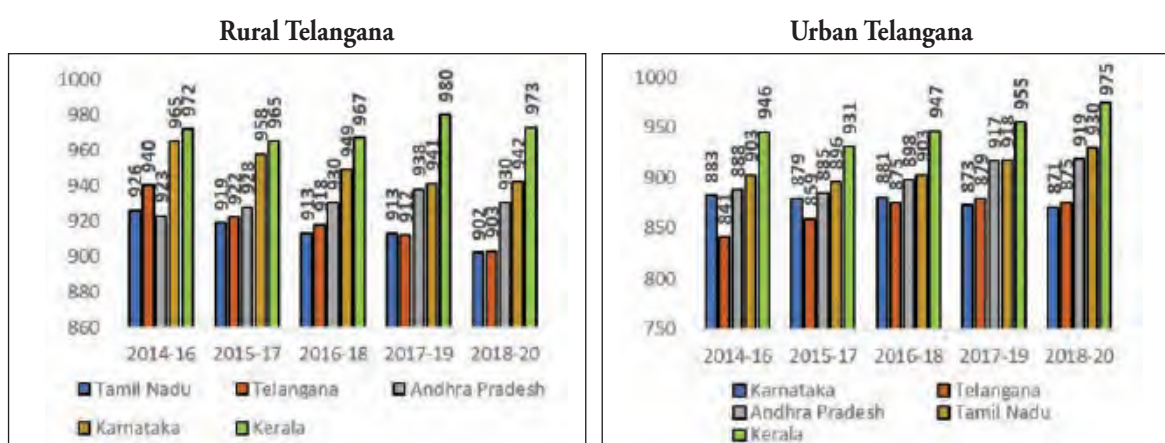
of increase in urban areas will continue, the state may likely to achieve the national target set for this indicator i.e. 954 by 2030. The targets set by the state Government for short and long run periods appear to be on higher level (Table 5.1).

Figure 5.1 Trends in Sex Ratio at Birth in all-India and Telangana



Source: SRS 2020

Figure 5.2 Sex Ratio at Birth across Southern States of India



Source: SRS 2020

The socio-cultural and religious practices and preferences for sons and availability, affordability of diagnostic tests have been crucial in improving the present levels (MWCD, GOI, 2019)⁵¹. Further, around 14.1 percent of men and 10.5 percent of women (aged 15-49 years) in the state have expressed to have more sons than daughters

(NFHS IV, 2015-16)⁵². The status of women and girl child needs to be enhanced to control the female infanticide and feticide. Since the preference for sons has strongly rooted in our minds, the focus should be on making the people value the girl child and provide girls equal opportunity and rights.

51 <https://wcd.nic.in/sites/default/files/Guideline.pdf> accessed on 11-18-2020

52 <http://rchiips.org/nfhs/NFHS-4Reports/India.pdf> accessed on 11-18-2020

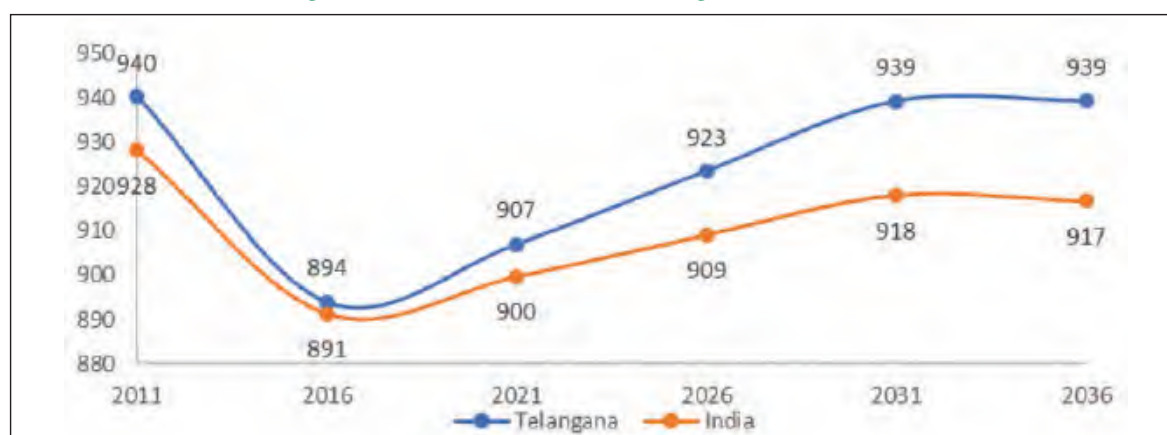
Keeping in line with the objectives of Beti Bachho Beti Padhavo (BBBP), the Govt. of Telangana State launched *Mana Inti Lakshmi* in 6 Mandals of Nalgonda district where there is a low child sex ratio and practice of selling girls (WDC&SC, 2018-19)⁵³. All these efforts at creating awareness and sensitise the people on the issue coupled with the strict implementation of the provisions of the PC and PNDT Act will reflect on the improvement of the sex ratio at birth in future.

Child Sex Ratio (CSR)

Declining child sex ratio is a demographic change that occurred due to socio-cultural and biological factors. It also indicates that the number of females is getting disproportionately less in the society. The CSR in Telangana declined from 957 to 940 during

the period 2001-2011. Basing on the age-wise projected population for the State of Telangana (Report of the Technical Group on Population Projections, 2019), the CSR declined sharply from 940 to 916 during the period 2011 to 2036 except for the year 2026 (Figure 5.3). Between 2021 and 2026, population in the age group 0 to 4 years increased at the rate of 1.5 percent per year for boys and 2.3 percent per year for girl children. The rapid increase in population (0-4 years) between 2021 and 2026 and decline thereafter but at slow pace indicate a fluctuating trend in the CSR during 2011 to 2036. Rapid decline in infant mortality among girls and the equal distribution of live births by order of birth for both girls and boys in the State indicate a positive trend towards achieving a high CSR by 2030.

Figure 5.3 Child Sex Ratio in Telangana and all-India



Source: Population Projections for India and State 2011-2036, November 2019, National Commission on Population, Ministry of Health and Family Welfare, New Delhi

Across the districts, the CSR is below 900 (Census, 2011) in Wanaparthy (Rural), and Narayanpet and Jayashankar (Urban) districts. The CSR is below 940, the state average, in 288 rural mandals and 79 urban mandals. Nalgonda, Nagarkurnool and Rangareddy districts have highest number of rural mandals and Hyderabad and Medchal have highest number of urban mandals with CSR less than 940.

The government is making concerted efforts to ensure that every child is born healthy and grows and thrives to realise his / her full potential. The Government has launched “*Telangana Newborn Action Plan*” with the aim to reduce the Infant Mortality Rate and Neonatal Mortality Rate. Currently 29 *Special Newborn Care Units (SNCU)* are saving infants and providing exemplary service. The Government aims to establish at least one SNCU in every district. To provide nutritional

53 Annual Report 2018-19, Department for Women, Children, Disabled & Senior Citizens, Govt. of Telangana

and clinical management services to child with Severe Acute Malnutrition (SAM), the government established *Nutrition Rehabilitation Centres (NRCs)*. At present 12 NRCs are functioning in the State. Another initiative of government towards enhancing the survival of infants is the establishment of *Kangaroo Mother Care (KMCs)* units, a simple cost-effective technique, for preventing death of low-birth-weight infants.

Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex

Gender gap in various fields needs a better understanding of how laws and policies support equal chances to women and girls. Policies such as tax exemption for the land titled in the name

of women resulted in increasing women's access to resources (as in Nepal) and provision of paid parental leave for men has successfully involved men in child care while supporting women in retaining their work (introduced in Finland, Iceland and Sweden) can help in shaping the social norms. Constitutions of different countries guarantee gender equality and through which women challenged the discriminatory practices in many contexts. For instance, such guarantees led to the prohibition of marital rape in Nepal, invalidated the law that prohibits women from inheriting in South Africa, and banning sexual harassment of women in work place in India (WGCD-UCLA, 2018)⁵⁴. The constitutional protections for gender equality in India are presented in the table below.

Table 5.4 Constitutional Protections for Gender Equality in India

Constitutional Approach to Gender Equality	
Domestic violence legislation	
Constitutional Approaches to Gender Equality	Yes
Is there domestic violence legislation?	Yes
Are there criminal penalties for domestic violence?	Yes
Do protection orders for domestic violence exist?	Yes
What types of violence does domestic violence legislation cover?	Physical, sexual, emotional, and economic
Sexual harassment laws	
Is there legislation that specifically addresses sexual harassment?	Yes
Is there legislation on sexual harassment in employment?	Yes
Marital rape laws	
Does legislation explicitly criminalize marital rape?	No
If not, can a wife or partner file a complaint?	No
Is the husband exempt from facing criminal penalties?	Yes
Paid leave, equal pay, access to credit and legal age	
Is paid leave available to mothers of infants?	Yes
Length of Maternal Leave	26 weeks
Is paid leave available to fathers of infants?	No
Are working women and men guaranteed any leave for their children's health needs?	No
Are there legal protections against gender discrimination in hiring and pay?	Hiring only
Does the law prohibit gender discrimination in access to credit?	No
Is paid maternal leave extended in cases of illness or complications?	Yes
Legal Age of Marriage for Girls	18 years

Source: WGCD-UCLA, 2018

⁵⁴ <https://www.icrw.org/wp-content/uploads/2018/01/WGCD-UCLA-Final-Report.pdf>

The major Acts being implemented in this direction are:

- The Immoral Traffic (Prevention) Act, 1956
- The Dowry Prohibition act, 1961
- The Indecent Representation of Women (Prohibition) act, 1986
- The Commission of Sati (Prevention) Act 1987
- The Telangana Women's Commission Act, 1998
- The Protection of Women from Domestic Violence Act, 2005
- The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) act 2013

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) demonstrates that gender-sensitive policy interventions improve the women's access to economic resources. Studies have shown that the scheme enhances the financial inclusion and autonomy of women (WGCD-UCLA, 2018).

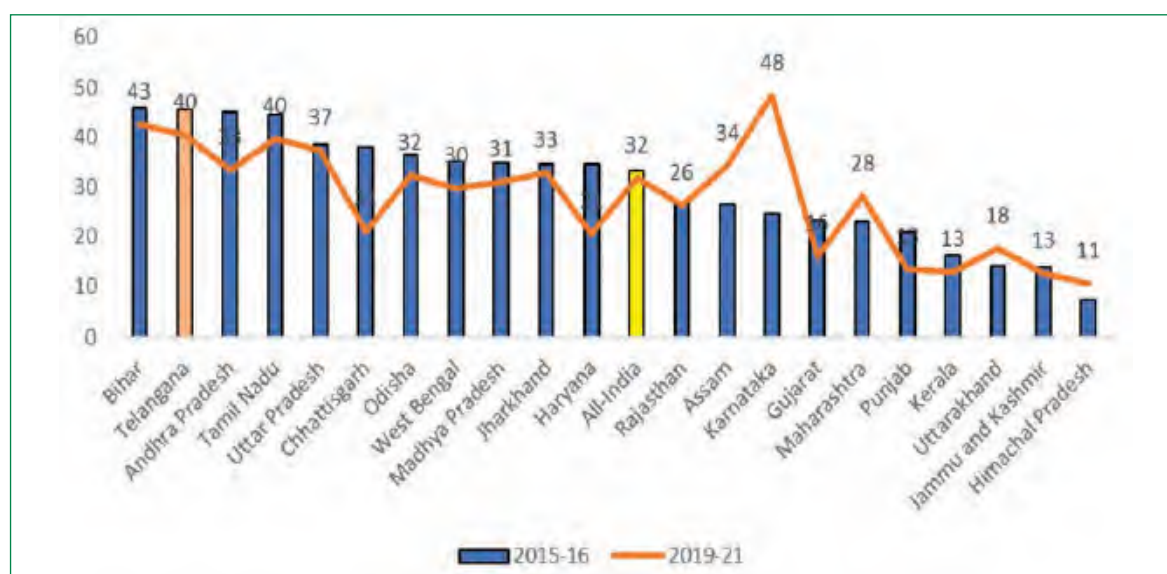
To uphold the Constitutional mandate, the State has enacted various legislative measures intended to ensure equal rights and to counter various forms of violence and atrocities.

Target 5.2: End all violence against and exploitation of all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation

Indicator 5.2.1: Percentage of ever married women age 15-49 years who have ever experienced physical or sexual violence committed by their husband

According to NFHS IV, 2015-16, in Telangana, around 43 percent of women (15-49 years) have experienced physical or sexual violence committed by husbands. Telangana is one among the highest three states in this regard (Figure 5.4). The current round of NFHS V 2019-20 data shows a decline by 6.1 percentage points in the state i.e. from 43 to 36.9 percent; 5.3 and 9.6 percentage points in rural and urban areas respectively (Figure 5.5). However, Telangana stands the third highest State among 11 States (based on Phase I results) with regards to spousal violence during 2019-20.

Figure 5.4 Percentage of ever-married women aged 18-49 years who have ever experienced emotional, physical or sexual violence committed by their husband-2015-16 and 2019-21



Source: NFHS 4, 2015-16, MoHFW

Figure 5.5 Percentage of Ever Married Women Age 15-49 Years Who have Ever Experienced Physical or Sexual Violence Committed by Their Husband in Telangana-2015-16 To 2019-20



Source: NFHS 4 and 5, 2015-16 and 2019-20, MoHFW

Indicator 5.2.2: Rate of crimes against women per 1,00,000 women population

According to the Crimes in India (CII) of the National Crime Report Bureau (NCRB, 2019), around 12.6 percent of total crimes are against women in Telangana. The crimes against women reported in state during 2015 were 15,135 which increased to 18,394 during 2019. The number of cases per lakh women increased from 83.1 in

2015 to 99.3 in 2019 and it was the fifth largest among the 29 states of India (Figure 5.6). Out of 99.9 crimes per lakh women population, 46 cases were reported under cruelty by husband or his relatives, the state ranked third in this regard next to Rajasthan and Assam. The incidence of this crime increased from 34.2 in 2018 to 46 in 2019 (Table 5.5). Hyderabad is the second city in the country with highest number of domestic violence cases after Delhi.

Figure 5.6 Crime rate against women in Telangana (per one lakh women population)



Source: Crime in India, Reports from 2015 to 2019, National Crime Report Bureau, Ministry of Home Affairs

Table 5.5 Crimes Against Women Per Lakh Women Population by Major Type of Crime in Telangana

Crime	2015	2016	2017	2018	2019
Rape	6.1	6.9	3.0	3.3	4.7
Attempt to commit rape	0.2	0.2	0.2	0.2	0.2
Kidnapping and abduction of women	3.6	5.4	5.0	6.1	7.1
Dowry deaths	1.4	1.4	1.4	1.0	0.9
Assault on women with an intent to outrage her modesty	19.8	20.5	23.8	24.8	22.6
Insult to modesty of women	7.1	5.5	6.3	4.8	3.8
Cruelty by husband or his relatives	40.3	39.2	42.4	34.2	46.1
Abetment of suicide of women	3.2	3.1	2.7	2.4	2.2
Total	81.7	82.2	84.8	76.8	87.6
Overall	83.1	83.7	94.7	87.1	99.3

Source: Crime in India, Reports from 2015 to 2019, National Crime Report Bureau, Ministry of Home Affairs

Indicator 5.2.3: Proportion of Sexual Crimes Against Girl Children to the Total Crimes Against Children

percent of total crimes reported against children in 2019 (Table 5.6). This crime rate under this Act has been continuously increasing in the state.

The cases reported under the Protection of Children from Sexual Offences Act occupied 47

Table 5.6 Protection of Children from Sexual Offences Act-Telangana

Year	% Share in total crimes against children	Rate per lakh girl children
2015	9.8	2.4
2016	39.8	10.4
2017	45.6	14.6
2018	44.4	14.9
2019	47.4	17.9

Source: Crime in India, Reports from 2015 to 2019, National Crime Report Bureau, Ministry of Home Affairs

Indicator 5.2.4: No. of One Stop Centres (Sakhi Centres)

The scheme is being implemented in all the 33 districts. Legal services, psycho social counselling, medical assistance, temporary shelter, referrals made to other shelters/swadhar homes, conducting awareness programmes are the important services provided by Sakhi OSCs. Among these services, legal and psycho social counselling are the major services rendered by them. The survivors of gender-

based violence approach Sakhi OSCs through self-referral, Women Helpline 181, and through government agencies. Housewives, students and women belonging to backward community in the 18-25 years age group comprise the survivors that approach these centres (TISS, 2020)⁵⁵.

The TISS report shows that a total of 8410 cases were registered in the Sakhi OSCs across all districts in 2019-20. Out of these cases, domestic violence and dowry harassment cases constituted

⁵⁵ Sakhi One Stop Centres in Telangana, Annual Report, 2019-20, TISS and Department of Women Development and Child Welfare, Govt. of Telangana, April 2020 available at ss.edu/uploads/files/School_of_Gender_Studies_SAKHI_ONE_STOP_CENTRES_IN_TELANGANA_Annual_Report_2019-20.pdf

72 percent of complaints and highest number of cases was registered in Medchal Malkajgiri, Rangareddy and Hyderabad districts. Following the instructions of MWCD, the OSCs remained open during the lock down period. It is surprising to note that 89 percent of total cases reported were that of domestic violence cases during the month of April 2020. Training and capacity building workshops have been regularly conducted with all the staff of the centres.

Indicator 5.2.5: Number of Swadhar Homes

The Ministry of Women and Child Development is implementing the Swadhar Greh Scheme with effect from 01.01.2016 by merging two previous schemes viz. 'Swadhar' and 'Short Stay Homes' which cover the entire country. The Swadhar Greh Scheme largely covers widows, deserted women like survivors of natural disaster, victims of terrorist violence, trafficked women/girls, mentally challenged, HIV/AIDS affected etc. These women are in need of institutional support for rehabilitation so that they could lead their life with dignity. The Scheme envisages providing shelter, food, clothing and health services as well as economic and social security for them along with facilitating their emotional and economic rehabilitation into the society. As on 21st February 2020, Telangana has 22 Swadhar homes with 831 beneficiaries with an average of 38 women per home. The state government is planning to increase the number of homes to 28 by 2030.

'**SHE**' Teams were launched on 24th October 2014 in Hyderabad City as part of the Telangana State Government's vision of providing a totally safe and secure environment for women with in the larger concept of friendly policing. SHE Teams are engaged in round the clock surveillance of the city by mapping out "hotspots" and "hot timings" where offenders pounce on unsuspecting victims. They also aim to correct misguided youth and make them aware of the consequences of teasing women. By December, 2019, a total of 3110 persons were given counselling by them.

The SHE team has received total 9922 cases including 6181 in 2019 and 3741 in 2020. The data reveals that in the GHMC area, Cyberabad Commisisonerate having the highest number of complaints in both the years followed by Rachakonda in 2019 and Hyderabad in 2020. The data shows majority of the victims belong to the age group of 20 to 35 years (3057 out of total 9922) and most of the victims are students, private employees or housewives **BHAROSA** Centre at Hyderabad was established in May 2016 as a Society for protection of women and children with logistic help, funding and support from the Department of Women Development and Child Welfare, Telangana. The day-to-day operations of BHAROSA are handled by the Police Department, which supports its infrastructure and lends organizational strengths. The main purpose of BHAROSA is to provide integrated support to women and children who have been subjected to severe abuse, be it physical, sexual, financial or emotional. Victims approaching BHAROSA have unhindered access to all the support services that they need to overcome their abusive and oppressive circumstances.

Another initiative launched in 2017 which provides 24x7 free service for 356 days - **Women Helpline (WHL-181)** that allow women to lodge complaints against domestic violence, sexual harassment, dowry cases, eve teasing in public places/work places. Till March 2019 6363 women were benefited. Around 10 cases per lakh women population were reported under various forms of trafficking during 2019. **Ujjwala**, a comprehensive scheme is operational for preventing the trafficking of women and children. There are 5 Ujjwala homes functioning in the state providing rehabilitation services to the victims. **SHE-Taxi** is a two-way beneficial programme which gives support to women entrepreneurs to own and run a taxi and also provides safety and security to the women travellers (Socio Economic Outlook, 2020).

A separate unit aiming at women safety was established in 2019 as **Women Safety Wings** (WSW) to work towards a safe & secure society for women of Telangana State. WSW is a platform, mouth piece to co-ordinate SHE & BHAROSA Teams, support skill up gradation & specialisation, monitor the Protection of Children from Sexual Offences Act (POSCO), rape kidnap cyber stalking cases, evaluate & analyse quality of investigation & petition management with respect to crime against Women & Child, research outcome & trends, train stake holders (IOs, prosecutors, Sr.Officers, others), strengthen system enforcement investigation & trail monitoring, influence policy & desired outcomes.

Towards the implementation of the ***Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013***, **Local Complaints Committees (LCCs)** were constituted in 31 districts of Telangana State, with District Collector as the district officer. A user-friendly web and mobile application called T-SHE box is being designed by the Telangana State to take up sexual harassment of women at workplaces cases, where semi-literate and literate can complaint and check the status of their complaints.

As per Section 17(1) of the Commission for Protection of ***Child Rights Act, 2005*** (Central Act), a State Government may constitute a body to be known as the State Commission for Protection of Child Rights to exercise the powers conferred upon and to perform the functions assigned to a State Commission. Accordingly, the Government of Telangana constituted the State Commission for Protection of Child Rights to examine and review the safeguards provided by law to children, present reports on the status of child rights and protection from time to time, and examine all factors which inhibit the enjoyment of rights of children affected by terrorism, communal violence, riots, natural disaster, domestic violence, HIV/AIDS, trafficking, maltreatment, torture

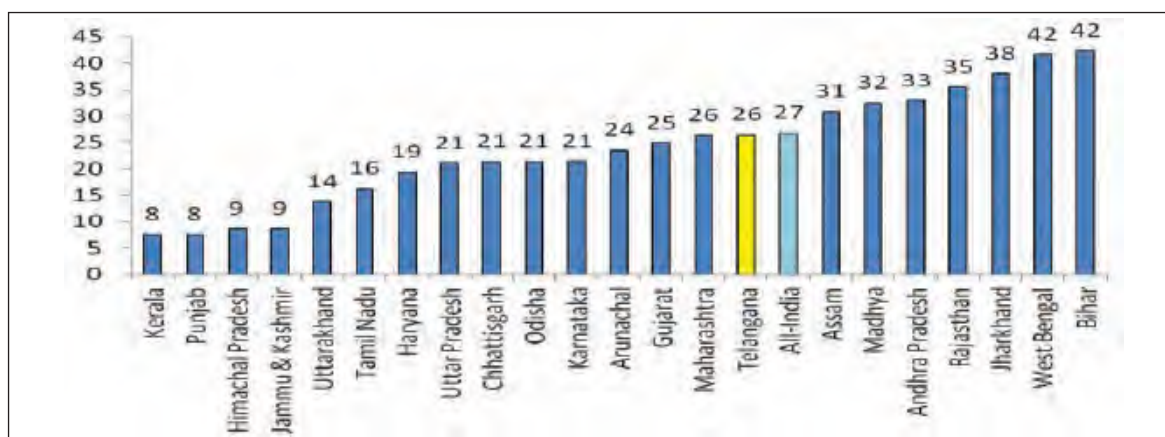
and exploitation, pornography, and prostitution. Appropriate remedial measures and any such other functions necessary for promotion of child rights are recommended to the Government (MWCD, GOI, 2019).

Target 5.3: *Eliminate All Harmful Practices, Such as Child, Early and Forced Marriage and Female Genital Mutilations*

Indicator 5.3.1: Proportion of Women Aged 20-24 Years Who were Married or In A Union before Age

The age at marriage is one of the proximate determinants of fertility. A low female age at marriage is linked to a low age at which first child is born. Young women are not physically and mentally prepared for motherhood, and this may lead to complications for both mother and child. The mean age at marriage in the state for girls increased to 19.8 years during 2012-13 (DLHS 4) as compared to 19.2 years during 2007-08 (DLHS 3). The percentage of currently married women aged 20-24 who were married before the legal age of 18 years declined to 23.5 during 2019-20 from 26 during 2015-16 and from 28 percent during 2012-13.

Telangana is one of the eight states that have higher percentage of younger (aged 20-24 years) married below 18 years of age (Figure 5.7) as compared to others. During the period 2015-16, around 10.5 percent of women among 15-19 years old have begun child bearing in Telangana as against 7.9 percent at all-India. This proportion is 14 percent in rural Telangana. The recent data from NFHS V pertaining to the period 2019-20 shows a decline in these proportions at 5.8 percent overall and 7.4 percent in rural areas. Despite several attempts by the government in controlling the early marriage of girls, there has not been much progress especially in rural areas.

Figure 5.7 Percentage of Women Aged 20-24 Years Who were Married below Legal Age (18 Years)

Source: Women and Men in India, 2020, www.mospi.nic.in

Indicator 5.3.2: Proportion of Cases Reported Under the Prohibition of Child Marriage Act (Early Marriage of Children below 18 Years of Age) to Total Crime Against Children

The number of cases reported under the Prohibition of Child Marriage Act, 2006 in Telangana state has been increasing continuously (Table 5.7). Concerted efforts have been made by the state to

prevent child marriages. Child protection systems have been strengthened by setting up District Child Protection units in all districts of the State. Bal Raksha Bhavans were established to bring all child protection systems under one roof. As many as 610 child marriages were stopped during the period 2018-19 as per the Annual Report of the Department of Women, Children, Disabled and Senior Citizens.

Table 5.7 Crimes Reported under Prohibition of Child Marriage Act, 2006 in Telangana

Year	Cases	% Share in total crimes against children
2015	15	0.56
2016	19	0.65
2017	25	0.70
2018	24	0.64
2019	35	0.83

Source: Crime in India, Reports from 2015 to 2019, National Crime Report Bureau, Ministry of Home Affairs

Target 5.4: Recognise and Value Unpaid Care and Domestic Work through the Provision of Public Services, Infrastructure and Social Protection Policies, and the Promotion of Shared Responsibility within the Household and the Family as Nationally Appropriate

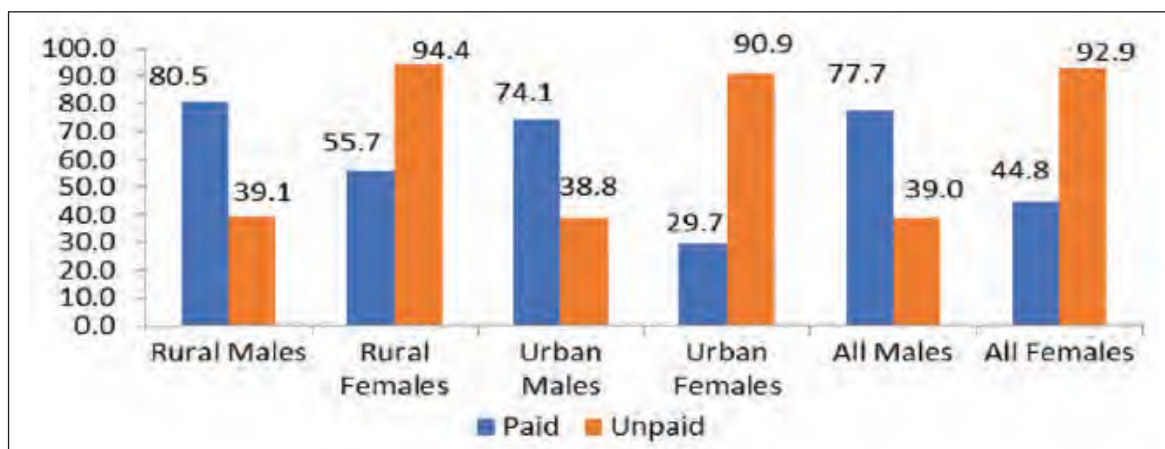
Indicator 5.4.1: Proportion of Time Spent on Unpaid Domestic and Care Work, by Sex, Age and Location

Less than half of women in the age group 15-59

years participated in paid work in Telangana as against 20 percent at all-India during 2019⁵⁶. The difference in the paid work participation of women between rural and urban areas is clearly visible in the state as only 30 percent of urban women and 56 percent of rural women participated in paid work. The corresponding rates for men are 81 and 74 percent in rural and urban areas respectively (Figure 5.8).

56 NSSO Time Use in India, 2019

Figure 5.8 Percentage of Persons Participating in Paid and Unpaid Activities (15-59 years) in Telangana-2019



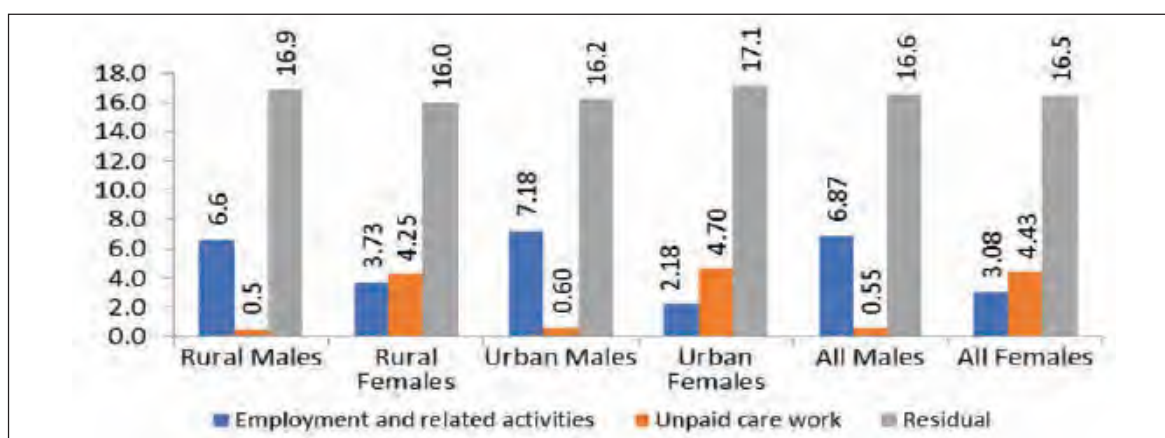
Source: NSSO Time Use in India, 2019

The average number of hours spent by women in unpaid domestic work is 4.25 hours in rural and 4.70 hours per day in urban areas (Figure 5.9). Though the percentage of women participate in unpaid work in rural areas is lower than that of urban, the amount of time spent per day per participant is almost the same between rural and urban areas. The time spent by women in unpaid domestic work is 8.5 times and 7.8 times higher than men in rural and urban areas respectively. This is the reason for men getting more time for self-care and maintenance. All these things indicate a deterioration in the quality of life that of time poverty.

The proportion of time spent on unpaid activities per person per day is estimated at 18.5 percent for females and 2.3 percent for males in Telangana as against 22.9 and 11.5 respectively at all-India. These proportions are slightly higher for urban female at 19.6 percent as compared to rural female at 17.7 percent in the state.

Time poverty not only creates stress and fatigue but also creates material poverty because it reduces the quality of goods and services that are delivered through unpaid activities (C.P. Chandrasekhar and Jayathi Ghosh, 2020)⁵⁷.

Figure 5.9 Average Time (Hours) Spent in a Day per Participant (15-59 years) in Telangana-2019



Source: NSSO Time Use in India, 2019

57 Business Line, October 6, 2020

Target 5.5: *Ensure Women's Full and Effective Participation and Equal Opportunities for Leadership at all Levels of Decision-Making in Political, Economic and Public Life*

Indicator 5.5.1: Percentage of Seats held by Women in National Parliament, in State Legislature and in Local Self Government

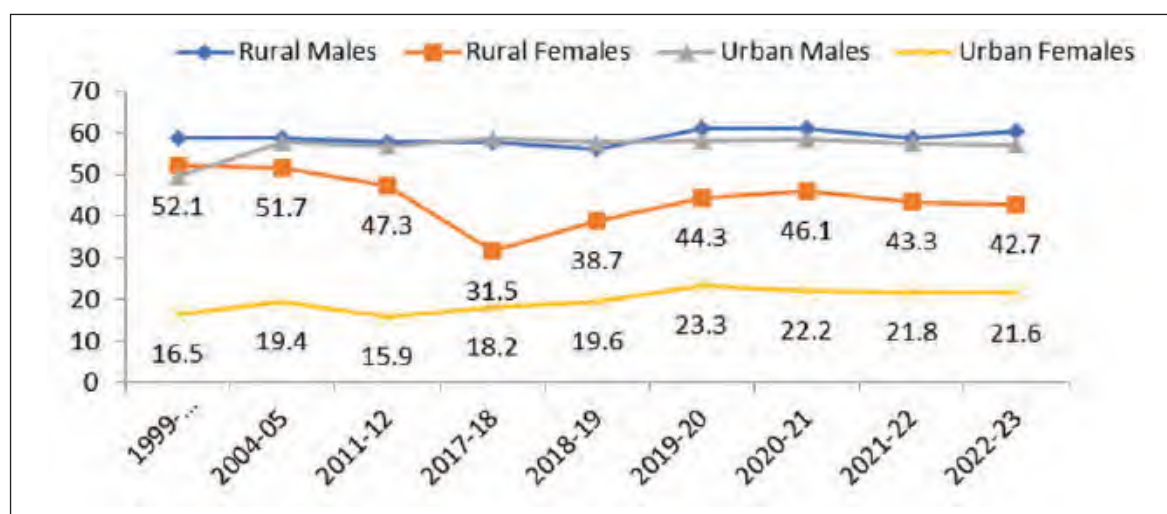
The participation of women in political institutions is low in the State. The data based on Election Commission of India for general elections held for 17th Lok Sabha, 2019 reveals that there is only one women member in the Lok Sabha out of total 17 seats from Telangana. The participation of women in the state assembly during the elections 2018 was 5 percent (6 women out of 113 total seats). The Government of Telangana amended local body's acts such as Panchayat Raj, Urban Local Bodies and Greater Hyderabad Municipal Corporation to increase the number of women elected representatives. As per the Panchayat Raj Act

2018, 50 percent reservations have been provided for women in PRIs. Accordingly, 50.74 percent i.e. 67486 number of women elected as representatives in Panchayat Raj Institutions.

Indicator 5.5.2: Female Labour Force Participation Rate

The female labour force participation rate is higher in the State (30.8) than all-India (18.6) and many other major States of India during 2018-19. However, the female labour force participation rate in rural areas is continuously declining during the period from 1999-2000 to 2017-18 and showed improvement during 2018-19. Though there has been a continuous increase in the female labour participation rate in urban areas since 2011-12, it is lower than that of rural women by half during 2018-19 (Figure 5.10). The improvement in the labour force participation rates of women during 2018-19 both in rural and urban areas is a positive development in the state.

Figure 5.10 Trends in Labour Force Participation Rates in Telangana-1999-200 to 2022-23



Source: NSSO Employment Unemployment Surveys (55th, 61st, 68th Rounds) and PLFS 2017-18 and 2018-19

Telangana is one of the leading states in the implementation of *Mahatma Gandhi National Rural Guarantee Scheme (MGNREGS)*, the biggest social protection and economic empowerment programme. MGNREGS is being implemented in 12,770 Gram Panchayats covering 540 mandals of 32 districts with 53.4 lakh job cards

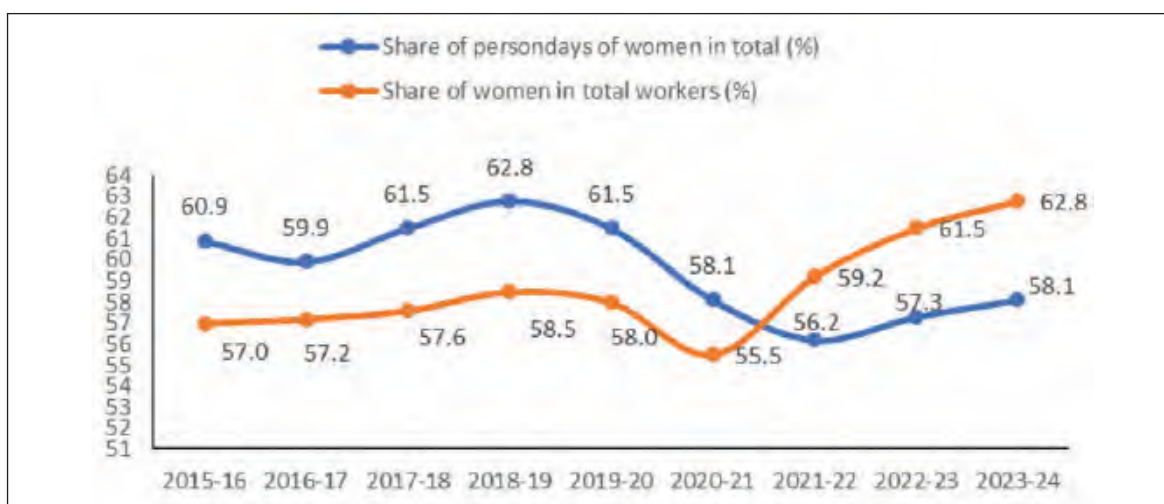
issued to 1.1 crore wage-seekers. The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), which stipulates women's participation at a minimum of 33 per cent, the share of women in total workers participated in MGNREGA has improved marginally from 57 percent in 2015-16 to 58 percent in 2019-20 and

the state ranked sixth next to Kerala, Tamil Nadu and Rajasthan, Himachal Pradesh and Punjab. The share of person-days of women in total person-days also improved slightly from 60.9 to 61.5 percent during this period. There is a decline in the share of women in total workers and number of days of women in total days during the period 2020-21. The share of women workers in MGNREGS is 55.5 percent and share of person-days of women is 58 percent during 2020-21. Both these shares fell to a five-year low due to the nation-wide lockdown that stalled work in response to COVID 19 crisis. In Telangana there was a complete halt with no person-days generated during the month of April 2020, the month which usually have higher demand for work under this programme. The decline in the share of women in total workers and total person-day started before the pandemic itself (Figure 5.10A). The average number of days of employment per household was not only lower than the mandated 100 days but it is also declining since 2019 at the state level and across many districts.

According to the PLFS 2018-19, the share of women in total workers is 37.6 percent while their share in MGNREGS is 57.3 percent. More women are being attracted to this programme because of high wage rates than that available outside and also proximity to worksites (Narayanan, 2020)⁵⁸. Since the income of female workers adds to the household income and raises the standard of living of their households, this decline in work added to the affects of pandemic situation in the state. Decline in the share of women in paid-employment nature of work under MGNREGS has a great impact not only on income but on gender equality and women empowerment.

The participation of women in MGNREGs is less than 50 percent in Adilabad and Komarambheem districts. Factors such as age, education, occupation status, equal and timely wages, worksite facilities and membership in SHGs influence the participation of women in the programme. The participation of SCs and STs across the districts is not commensurate with the proportions of their population.

Figure 5.10A: Trends in the Participation of Women in MGNRES in Telangana



Source: *nrega.nic.in*

58 Narayanan, Sudha (2020): "The continuing Relevance of MGNREGA", *www.TheIndiaForum*, April 3, 2020

Indicator 5.5.3: Percentage of Non-agricultural Proprietary Establishments Owned by Women

According to the NSSO Unincorporated Non-agricultural Enterprise Survey (NSSO, 2015-16), the distribution of unincorporated enterprises by type of ownership in Telangana reveals that 37.3 percent of enterprises are owned by females. In rural areas the share of female proprietary enterprises has gone up to 47.6 percent. A greater proportion of them are into the manufacturing sector.

Under Stree Nidhi the State Government is providing interest free loan upto to Rs. 10 lakhs for SHGs. **Mahila Shakti Kendra (MSK)** under the Umbrella Scheme **Pradhan Mantri Mahila Sashaktikaran Yojana (PMMSY)** aims to empower rural women through awareness generation, training and capacity-building measures.

The Telangana State Women Cooperative Development Corporation (TSWCDC) is a key player in capacity-building of rural women in Telangana State by offering various vocational courses, both in technical and service sectors with an integrated developmental approach of training and facilitating women to acquire self/wage employment opportunities. The TSWCDC is maintaining 10 District Resource Centres covering 31 districts of State.

TSWCDC also manages Working Women's Hostels. Currently, seven working women's hostels are functioning in Nalgonda, Karimnagar, Nizamabad, Kushaiguda (Medchal), Mahabubnagar, Warangal, and Hyderabad districts. Around 488 women are residing in these hostels as against the strength of 518. The Corporation proposed to construct new WWHs in 21 new districts with day-care facility for their children, wherever possible, in urban, semi-urban, or even rural areas.

To promote women entrepreneurship, the Government of Telangana launched WE Hub in 2017. The main aim of this initiative is to promote and foster women's entrepreneurship by way of incubation and access to Government

and building a collaborative ecosystem. By 2019, 26 start-ups graduated and out of which 24 have moved 3 stages.

The Telangana State Commission for Women is constituted with a mandate to improve the status of women and to act against any ill-treatment towards women in the State. The major activities of the Commission include: a). monitoring the laws in force for equality and fair treatment of women b) monitoring the recruitment and promotions made in State and Public Sector firms and to ensure that equal opportunities are guaranteed to women c). Inspecting women's jails, hostels, homes, shelter homes, etc. d). Studying and recommending the Government about welfare measures to be adopted for women, and so on.

***Target 5.6:** Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development (ICPD) and the Beijing Platform for Action and the outcome documents of their review conferences*

Indicator 5.6.1: Percentage of Women Using Modern Method of Family Planning

Indicator 5.6.2: Unmet Need for Family Planning for Currently Married Women Aged 15-49 Years

Indicator 5.6.3: Proportion of Population Aged 15-49 Years with Comprehensive Correct Knowledge of HIV / AIDS

Indicator 5.6.1 is the proportion of women aged 15–49 years who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care. The target aimed at that all the women will have such decision-making strength and power especially with respect to their sexual relations, contraceptive use and reproductive healthcare. Further, it expects to have legal framework (laws and regulations) that guarantees equal access to sexual and reproductive healthcare, information and education.

According to the estimates of National Family Health Survey (NFHS-5) in 2019-20, nearly 68 per cent of reproductive age (15-49 years) women in Telangana state were using contraceptives. There is an improvement of 11 percentage points from 57 percent in 2015-16 to 68 percent in 2019-20. Almost all of the 68 per cent were using modern contraceptive methods wherein sterilisation is the most sought-after contraceptive in the state.

As regards the indicator 5.6.2 unmet needs of the women, declined from 7.4 in 2015-16 to 6.4 in 2019-20. It indicates that although the performance of the state is better than the national average and, perhaps, than many other states, it has to go long way to achieve the desired outcome covering the women in the reproductive age. The overwhelming thrust on family planning during the past two decades has contributed to outstanding achievement in Total fertility Rate (TFR) reduction. The strategic realignment will entail shift of focus from family planning to population stabilisation – delayed age at marriage, birth spacing, improved pill and IUD uptake, RTI and STI management, male sterilisation, etc

About the awareness levels of HIV/AIDs, indicator 5.6.3, around 31 percent each of men and women in the age group 15-49 years have complete knowledge about HIV/AIDs in the State as per NFHS 5, 2019-20. There is a need to increase the

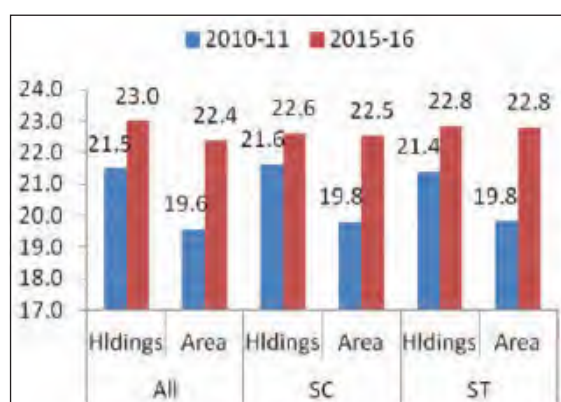
awareness levels and the NGOs working on this problem have to play a key role in the generation of awareness.

Target 5.a: Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources in accordance with national laws

Indicator 5.a.1: Operational Land Holdings - Gender Wise

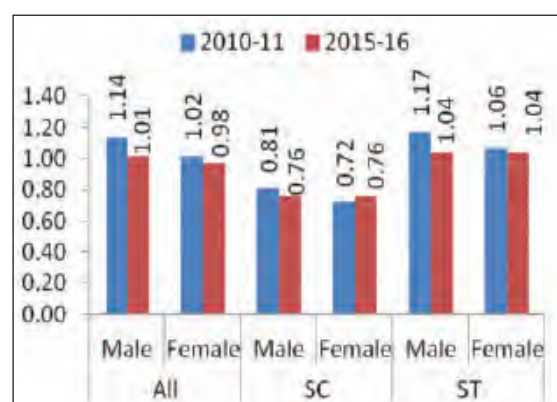
The access to land among women is examined by taking their share in total operational holdings and land. The share of women in total holdings increased from 21.5 to 23 percent and in total area from 19.6 to 22.4 percent during the period 2010-11 – 2015-16 (Figure 5.11). The same pattern is observed among SCs and STs in the State. The average size of operational land holding of women is lower than that of men and it declined. However, the size of land holding is same for both men and women among SCs and STs during 2015-16 (Figure 5.12). Land distribution to Dalits, a welfare scheme of the government, provides 3 acres of land to SC women along with the provision for the creation of irrigation, land development and other inputs for sustained livelihood. The government distributed 2524 acres of land to 959 beneficiaries under this programme.

Figure 5.11 Share of Women in Holdings and Area in Telangana (%)



Source: Agriculture Census, 2015-16

Figure 5.12 Size of Operational Holdings by Gender and Social Groups in Telangana (hectares)

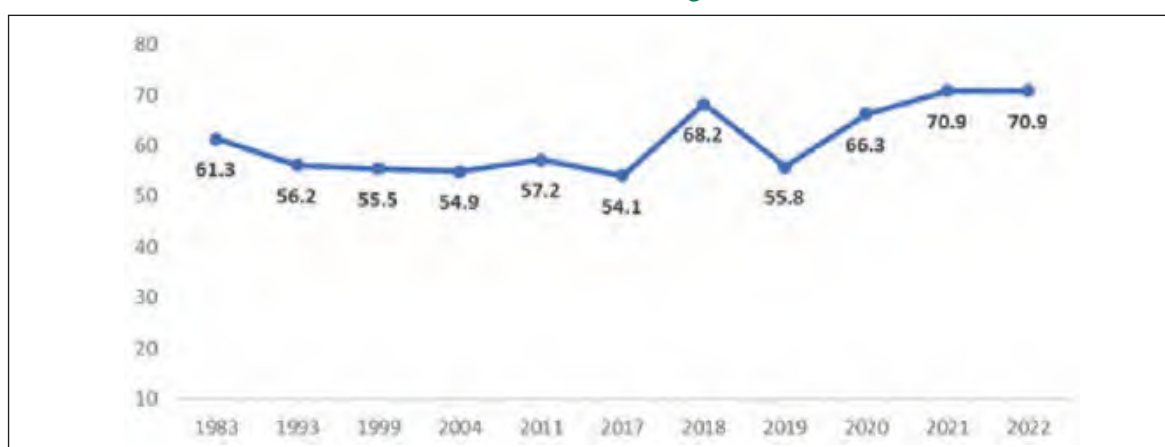


Indicator 5.a.2: Proportion of Female Agricultural Labourers**Indicator 5.a.3: Wages of Casual Labourers (Gender Wise)****Indicator 5.a.4: Agricultural Wages (Gender Wise)**

The limited ownership of land among women shows their participation in work as casual labour. Female constitute around 61 percent of agricultural

labour in rural Telangana during the period 1983. This had increased to 68 percent during the period 2018-19. There was a decline in their share during the period between 1983 (61.3 percent) and 2017 (54.1 percent) except during 2011 (Figure 5.13). Further women's wage rate was 74 percent of male wage during 2011 which increased to 81 percent during 2018-19. The improvement in wages for casual labour female is more in the case of non-agriculture sector as compared to agriculture.

Figure 5.13 Trends in the share of female agricultural labour in total agricultural labour in rural Telangana



Source: NSSO Employment Unemployment Surveys (55th, 61st, 68th Rounds) and PLFS 2017-18 and 2018-19

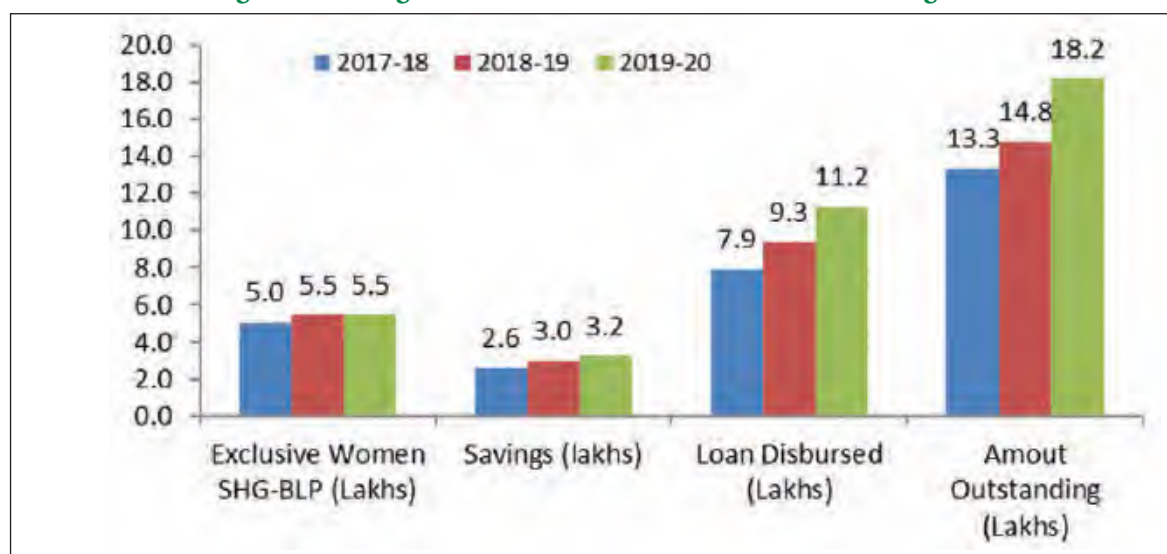
Indicator: 5.a.5: Exclusive Women SHGs in Bank Linked SHGs

SHG Bank Linkage Programme (SHG BLP) has become world's largest community-based microfinance programme. This initiative played a major role in making credit access to unbanked rural women and reducing gender gap in access to financial services. The exclusive women SHGs constitute 96 percent of total SHGs in Telangana. They rose from 5.02 lakhs in 2017-18 to 5.47 lakhs in 2019-20. The parameters such as the number of SHGs, amount of loan disbursed and the amount

of loan outstanding have shown positive growth during the period 2017-18 to 2019-20 (Figure 5.14). The number of SHGs availed bank loans increased by 8 percent and amount disbursed increased by 21 percent during the period 2018-19 and 2019-20. The percentage of NPAs to total loan outstanding is declining in the state from 3.64 in 2017-18 to 2.66 percent in 2019-20. SHG BLP has put more emphasis on financial aspects rather than social aspects of the programme. SHG is a tool for holistic empowerment of poor but not just the provider of credit. (NABARD, 2019-20)⁵⁹

59 Status of Microfinance in India, 2019-20

Figure 5.14 Progress of Exclusive Women SHG-BLP in Telangana



Source: Status of Microfinance in India, NABARD, 2017-18, 2018-19 and 2019-20

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) are working towards enabling the disadvantaged communities perceive possibilities for change and bring about desired change by exercising informed choices through collective action. By providing bank credit linkage to SHGs the SERP focuses on converting these loaning into Livelihood activities to realize Family Income Enhancement thereby reduction of poverty (Telangana Socio-Economic Outlook, 2021).

As a part of the welfare measures and social safety net, Government of Telangana introduced 'Aasara' Pension scheme in which eligible poor & vulnerable persons will get financial support in order to live with dignity. Under **Aasara Scheme** all Old Age poor people in the state, Physically Handicapped, Widows, Toddy tappers, Weavers, Aids patients, Beedi rollers and aged artists are

being provided with Asara Pensions. In order to mitigate the miseries of Beedi Rollers, Telangana State government increased the monthly pension to beedi workers from Rs. 1000 to Rs. 2000. The Government has issued an order stating that even though one eligible person in a family is benefitted with pension scheme, a beedi worker having provident fund account will also get the benefit of pension.

The state government increased the financial assistance to single women from Rs.1000 per month to Rs. 2000 under **Single Women Pension Scheme**. Single women above 18 years of age married but separated from husband for more than a year, unmarried women having 30 years of age in villages, 35 years of age in towns will be eligible for the scheme.

Through Farmer Producer Groups (FPGs) and Farmer Producer Organisations (FPOs), Custom Hiring Centers will play a key role in drudgery reduction to women in farming operations. Apart from livelihood interventions, SERP has initiated Gender activities such as eradication of dowry harassments, woman trafficking, child labour, child marriages and redressal of family disputes, awareness camps on legal rights, hygiene of women and adolescent girls, SERP has also initiated Nutri

Garden activities to develop a habit to consume vegetables and promoting dietary diversification among the rural community.

Target 5.b: *Enhance the use of Enabling Technologies, in Particular ICT, to Promote Women's Empowerment*

Indicator 5.b.1: Percentage of Women Employed in IT and ITeS Industry

The state holds a leading position in IT and ITeS in the country in terms of production and exports. Hyderabad is recognized as one of the leading information technology (IT) hubs globally. It houses over 1500 IT/ITES companies, which together employ over 5.4 Lakhs professionals and support indirect employment for over 7 Lakh people (Socio-Economic Outlook, 2020). The share of women in IT and ITeS sector workers increased from 5 percent in 2011-12 to 25 percent during 2018-19 (EUS, 2011 and PLFS, 2018-19). In order to decentralise the IT sector and spread employment across the districts, the government is developing IT Incubation Centres in Warangal, Karimnagar, Khammam and Nizamabad District.

Target 5.c: *Adopt and Strengthen Sound Policies and Enforceable Legislation for the Promotion of Gender Equality and the Empowerment of all Women and Girls at All Levels*

Indicator 5.c.1: Having Gender Budget Cell

The Government of Telangana is planning to establish Gender Budget Cell by 2022-23.

C. Efficacy of Interventions and the Challenges in Achieving the Targets

Target 5.1: End All Forms of Discrimination Against All Women and Girls Everywhere

The *Beti Bachao Beti Padhao (BBBP)* is a comprehensive scheme of Government of India which is being implemented countrywide the main aim to address the declining Child Sex Ratio (CSR) between 0 to 6 years and empowerment of girls and women, girl child education, to prevent

pre-birth sex selective elimination and to ensure survival and protection of girl child.

The BBBP programme is launched initially in 161 districts during 2015-17, and the initiative has been expanded to all the 640 districts in 2018-19 (as per 2011 Census) following the success of the scheme. Out of 640 districts, 405 districts are covered through Multi -sectoral intervention, Media & Advocacy and 235 districts covered through alert Media & Advocacy outreach.

The BBBP is implemented initially in Hyderabad district during the first phase i.e. 2015-16 under multi-sectoral intervention. Later during 2018-19 under third phase of BBBP multi-sectoral intervention, Warangal, Nalgonda, Mahabubnagar, Rangareddy, Adilabad, Karimnagar and Nizamabad districts were covered. During the third phase under alert Media Advocacy and Outreach, Khammam and Medak districts were covered during 2018-19.

The programme has two major components: Public awareness through mass media campaigns and Multi-sectoral action in the programme districts. Hyderabad district received the National award under awareness and sensitisation category and Karimnagar district has received under the category: "Effective Community Engagement". Implementation of such initiatives will change the mindset of people and create an environment that will value the girl child and her education.

Target 5.2: *End all violence against and exploitation of all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation.*

SHE Team, an initiative of the Govt. of Telangana to ensure safety and security of women in public places, has been functioning in the entire State since 2015. The Centre for Economic and Social Studies has conducted a quick survey in four districts viz., Hyderabad, Rangareddy, Medchal Malkajgir and Yadadri Bhuvanagiri, with the primary objective of assessing the level of awareness as well as the perspectives of the victims⁶⁰. The study found

that the level of awareness was low among the respondents below 20 years age. The study suggests that visuals and short skits through electronic media might enhance the level of awareness across all age groups. It is found that 271 out of 314 complaints have been resolved by SHE Team and 39 percent of the victims rated their experience with SHE Team as excellent. The study observed that some of the victims have not approached the SHE Team due to lack of knowledge about the location of the SHE Team and fear of facing consequences following the lodging of a complaint. Thus, the SHE Team initiative has to put more efforts to instil confidence among the victims. It is also necessary to include the details such as the location of SHE team, dress code of members working in SHE team and the cases dealt by SHE team in awareness programmes.

Awareness and publicity need to be generated among the public about the women help lines. Further the police officials need to update their knowledge regarding recent amendments to various laws. After the Nirbhaya incident in 2012, law was amended to bring zero FIR provision to enable immediate registration of a case, irrespective of the jurisdiction. But even police officials were not aware of the zero FIR provision⁶¹.

Along with SHE Team, a number of initiatives were introduced in the state viz. BHAROSA, One Stop Centres, Swadhar Homes etc to provide emotional and financial support to women and girl victims. Through all these initiatives the state government is able to provide adequate support to the approached victims. In order to fulfil its vision of providing safe and secure environment to women, the government should focus more on preventing the crimes by way of patrolling the most vulnerable areas, counselling the youth and training girls and women about safety measures etc.

Target 5.3: *Eliminate all Harmful Practices, such as Child, Early and Forced Marriage and Female Genital Mutilations*

In Telangana State, traditions and social norms, economic insecurity, lack of access to secondary education and social pressure are the primary drivers of child marriages. It is more important to strengthen specific entitlements to address poverty, social norms, traditions and social pressures, along with strengthening the enforcement mechanism. Robust, evidence-based data on girls and boys schooling and child marriages is important for learning and tracking the progress in the enforcement of law and advocacy (CESS, 2018)⁶². Bala Raksha Bhavans successfully stopped 610 child marriages in the state during 2018-19. Such initiatives will have to function effectively throughout the state.

Target 5.4: *Ensure Women's Full and Effective Participation and Equal Opportunities for Leadership at all levels of Decision-Making in Political, Economic and Public Life*

Telangana Academy for Skill and Knowledge (TASK) is a unique skill development initiative from IT, E&C Department aimed at improving the quality of graduates coming out of colleges by imparting industry-grade skill sets. More than 800 colleges have registered with TASK and over 1 lakh youth from across Telangana have been skilled since TASK's inception in June 2015. During 2015 about 43,271 students, during 2016 about 62,678 students were trained through TASK. In 2015 nearly 888, in 2016 about 2045 faculty members were accorded skill training. **Society for Elimination of Rural Poverty (SERP)**, Department of Rural Development, by providing bank credit linkage to SHGs, focus on livelihood activities to realize family income enhancement thereby reduction of poverty.

60 Impact of SHE Team in Telangana State, a Quick Assessment, CESS, 2020

61 U. Vindhya of the School of Gender Studies, TISS, Hyderabad, The Hindu, Hyderabad, December 3, 2019

62 CESS, 2018 "Facing Constraints and Seizing Opportunities: Child Marriages in Telangana State, Centre for Economic and Social Studies, Hyderabad.

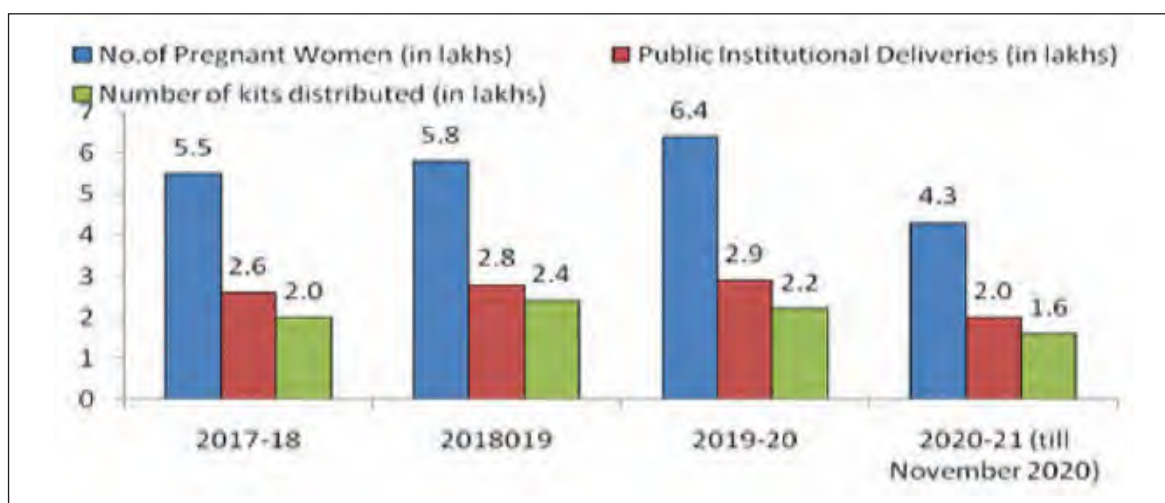
With the objective of providing quality education to girls, the State government also launched residential schools and colleges for girls in a large number. Keeping in view of the good health of the girl students, the government has introduced the distribution of Health-Hygiene kits to girls studying in government schools, Model schools, KGBV's. Each kit comprises 16 items - four stay free sanitary pads, two tooth paste tubes, tooth brush, tongue cleaner, coconut oil, talcum powder, mirror, comb, hair clips, rubber bands, shampoo, bindi sticker packets, 3 bath soaps and two washing soaps. Once in every three months for four times in a year these kits will be given to the girl students.

Target 5.5: *Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences*

For the good health of the 'Mother and Child' **KCR Kits** distribution scheme has been launched

by the government of Telangana in 2017. The programme was designed to avoid any wage loss during the pregnancy and to eliminate unnecessary C-Section. Under this scheme the loss of wages of women through labour are compensated by the government. The wage compensation of Rs.12,000 (Rs. 13,000 in case of female child) is paid to the woman in four tranches. With the initiative it is aimed at preventing child infanticide, increase deliveries at government hospitals, prevent post-natal deaths and infant deaths. On delivery, a kit containing 15 utility items is given to the woman. During the period 2019-20, 2.23 lakh KCR kits were distributed to 6.4 lakh lactating mothers. The number of deliveries taken place in the public institutions was about 2.9 lakhs during 2019-20 (Figure 5.15). The state government has appointed **women organisers** to supply KCR kits and also to monitor all the concerns related to women and child. One women organiser for two districts and one exclusively for Hyderabad district were appointed.

Figure 5.15 Progress of KCR Kit Programme



Source: Socio-Economic Outlook 2020-21

For the first time in the country **Mid Wife Training** course has been commenced by the state government. Special training for one year has been accorded to nurses to provide assistance for pregnant women in remote areas for better medical care.

Pregnant women, particularly in remote agency areas are facing grave problem for commuting to hospitals before and after deliveries. In order to provide transportation facility to pregnant women to hospital and take the mother and child back home safely **Amma Odi** programme is implemented. As

of November 2020, there were 300 vehicles as part of the Amma Odi programme and about 6.01 lakh women have availed transportation facility.

Under *Janani Sisu Suraksha Program (JSSK)* of National Health Mission is providing 102 vehicle services. From 1st January, 2015, one-time nutritious full meal is given to pregnant, lactating women and infants through Anganwadi Centres on a daily basis and the programme is named as '*Aarogya Laxmi*'. The programme is implemented through all the 35,700 Anganwadi Centres and 149 ICDS centres in State. *POSHAN Abhiyaan* is a flagship program to improve nutritional outcomes for children, adolescent girls, pregnant women and lactating mothers.

5.3 The Way Forward

Telangana stood as the least performer in SDG 5 based on national indicators despite serious efforts of the state government. The achievement of targets under SDG 5 is linked to the achievement of other targets that aim at the gender equality. Despite this, the goal has its own targets aiming to reduce discrimination of all women and girls in various spheres of life.

Reducing Discrimination Against Women and Girls

Declining CSR and low sex ratio at birth are the serious concerns for the state. Sex ratio at birth during 2016-18 in the state is 897 females per 1,000 males- rural 912 and urban 859. In order to achieve the national target of sex ratio at birth of 954 females for 1,000 males more focus should be on urban areas. Controlling early marriages and thereby early motherhood is a prerequisite for reducing infant and maternal mortality rates. The performance of the state on nutritional and child protection indicators is lagging behind the better performing states such as Kerala and Tamil Nadu among the southern states. A legal framework needs to be in place and active and there is a need of wide spread of community awareness about the consequences of practices of gender inequality.

Thus, the existing programmes of awareness generation and multi-sectoral intervention in critical districts need to be strengthened.

Reducing Crimes Against Women and Girls

The incidence of crimes against women and girls has been increasing in the state in spite of the efforts of the state government towards controlling them. Out of total crimes, domestic violence cases constituted the largest in the state. The state government initiatives in providing various kinds of assistance to the victims and help lines need to be continued and extended to the uncovered districts. Preventive measures such as changing the mind-sets by counselling the people and increasing representation of women in law implementing and enforcing fields will bring a positive change. Speedy disposal and decent handling of cases will encourage women to come forward to report such incidences.

Increasing Labour Force Participation and Skill Development

Low and declining women work participation and unequal wage for work are the crucial aspects of women participation in economic activities.

Convergence of various Government Line departments which undertakes skill development trainings and achieve coordination in bringing all skilling activities under one roof to accrue economies of scale and build up a strong framework of skill development and potential employability.

Ensure registration of unemployed youth male and female, through Model Career centre of Employment Exchanges and undertake psychometric analysis of the unemployed and map the available skill with the relevant market opportunities and provide short term skill development for enhancing employable skills for sustained employment.

Effective implementation of policies that provide protection against under pay and enabling the eligible women workers to avail social security benefits is needed.

Women Entrepreneurship

Low productivity of the units owned by women as compared to men is another challenge to overcome to increase their entrepreneurship. Further, they work mostly as unpaid family helper in most of the household industries. There is a need to increase the overall participation and access to relevant skill, technical and vocational expertise for employment, decent jobs and entrepreneurship.

Gender Budgeting

In view of ensuring Gender Parity in socio-economic aspects, the government is obliged to ensure sufficient fiscal allocation, gender planning and monitoring, and impact assessment of various initiatives undertaken. The major thrust areas in this direction is to enlarge their opportunities in paid employment, access to health care services and education, and institutional arrangements for dealing with discrimination and exploitation (Stotsky Janet G. and Zaman Asad (2016); Ministry of Women and Child Development (2015)⁶³. These initiatives are intended to eliminate historical vulnerabilities faced by women, ensure productive and healthy life, improving ownership status over productive resources, and providing safe and non-discriminatory environment. At present, the Government of Telangana has not introduced Gender Budget Cells (GBCs), however, proposed to have a Cell in Department of Women Development and Child Welfare.

Transgender Policy

Unlike Karnataka, there is no state policy on transgender in Telangana state. The Karnataka State Policy for Transgender (TG) aims to integrate the TG communities into mainstream society and guarantee a secure future for them. However, the Government of Telangana is sensitive about their rights and welfare and opening of an exclusive police station for transgender in Hyderabad recently is one such move.

COVID-19 Lockdown

The government had taken various steps to meet the challenges posed by the pandemic in the areas of health and safety of women. Some of the various special initiatives is the supply of sanitary napkins to girls and women residing in the state institutes and supply of emergency kits to migrant women and children. The government has encouraged SHGs in the preparation of masks and PPE kits which enhanced not only local production but also the earnings of SHGs. The pandemic increased the hardships of women in terms of increasing domestic work and decline in income due to closure of informal units as majority of women engaged in informal activities. Report of domestic violence cases also increased during lockdown period in the state.

⁶³ Stotsky Janet G. and Zaman Asad (2016), "The Influence of Gender Budgeting in Indian States on Gender Inequality and Fiscal Spending", IMF Working Paper, WP/16/227.

Ministry of Women and Child Development (2015), "Gender Budgeting Handbook", Ministry of Women and Child Development, Government of India.

Annexure 5.1 SDG 5 - State Target Values

Target	Sl. No	Indicator	Status-2019-20	Target 2022-23	Target 2025-26	Target 2030
5.1	1	Sex Ratio at Birth	901	930	940	970*
	2	Child Sex Ratio	932	950	960	980#
	3	Whether or not legal framework are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex.	0	1	1	1
5.2	4	Percentage of ever married women age 15-49 years who have ever experienced physical or sexual violence committed by their husband	36.9	--	--	--
	5	Rate of crimes against women per 1,00,000 women population	99.3	--	--	--**
	6	Proportion of sexual crimes against girl children to the total crimes against children	47.4	--	--	--**
	7	No. of One Stop Crisis Centre (Sakhi Centres)	33	33	33	33
	8	No. of Swadhar homes	23	25	27	28
5.3	9	Proportion of women aged 20-24 years who were married or in a union before age 18	23.5	20	15	10@
	10	Proportion of cases reported under the Prohibition of Child Marriage Act (early marriage of children below 18 years of age) to total crime against children	619! 35 as per NCRB 2019-20	256	120	25
5.4	11	Proportion of time spent on unpaid domestic and care work, by sex, age and location	Rural female-17.7 Urban female-19.6 Total female-18.5	--	--	--
5.5	12	Percentage of Seats held by women in State Legislature	6+1	--	--	--
		Percentage of Seats held by women in National Parliament	Lok Sabha: Total Seats - 17, Women Seats - 1 Rajya Sabha: Total Seats - 7, Women - 0	--	--	--
		Proportion of seat held by women in PRIs	50.75	--	--	--
	13	Female labour force participation rate	Rural female-38.7 Urban female-19.6 Total female-30.8	--	--	--
	14	Percentage of non agricultural proprietary establishments owned by women	37.3	--	--	--

Target	Sl. No	Indicator	Status-2019-20	Target 2022-23	Target 2025-26	Target 2030
5.6	15	Percentage of women using modern method of Family Planning	68	71	76	81
	16	Unmet need for family planning for currently married women aged 15-49 years	6.4	5	3	0
	17	Proportion of population aged 15-49 years with comprehensive correct knowledge of HIV / AIDS	Male-30.5 Female-30.7	100	100	100#
5 a	18	Operational land holdings - gender wise	Male: 4579392 Female: 1367697	--	--	--
	19	Proportion of female agricultural labourers	Rural-68.2	--	--	--
	20	Wages of casual labourers (gender wise)	Male: Rs.380/- Female: Rs.368/-	--	--	--
	21	Agricultural wages (gender wise)	Male: Rs.406/- Female: Rs.364/-	--	--	--
	22	Exclusive women SHGs in Bank linked SHGs	547354	--	--	--
5b	23	Percentage of women employed in IT and ITeS industry	25	--	--	--
5c	24	Having Gender Budget Cell	0	1	1	1

* National Target is fixed at 954; **National target set is 0

Targets fixed by the HM&FW appear to be higher as compared to the historical trend

@ Targets fixed by the WD&CW appear to be higher as compared to the historical trend

! The number of cases reported by Home department is different from that of NCRB CII report

Annexure 5.2 SDG 5-Targets, Indicators, Nodal Departments and Sources of Data

Target	Indicator	Nodal Department	Sources of Data
5.1: End all forms of discrimination against women and girls everywhere	5.1.1: Sex Ratio at Birth 5.1.2: Child Sex Ratio 5.1.3: Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex	Department of Health, Medical and Family Welfare (HM&FW)	SRS Bulletins Census
5.2: Eliminate all forms of violence against all women and girls in public and private spheres, including trafficking and sexual and other types of exploitation	5.2.1: Percentage of ever married women age 15-49 years who have ever experienced physical or sexual violence committed by their husband 5.2.2: Rate of crimes against women per 100000 women population 5.2.3: Proportion of sexual crimes against girl children to the total crimes against children 5.2.4: No. of One Stop Centres (Sakhi Centres) 5.2.5: No. of Swadhar homes	Home Affairs	NFHS Crimes in India Annual Reports of Women Development and Child Welfare Department

Target	Indicator	Nodal Department	Sources of Data
5.3: Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilations	5.3.1: Proportion of women aged 20-24 years who were married or in a union before age 5.3.2: Proportion of cases reported under the Prohibition of Child Marriage Act (early marriage of children below 18 years of age) to total crime against children	Women Development and Child Welfare Department (WD&CW)	NFHS Crimes in India
5.4: Recognise and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies, and the promotion of shared responsibility within the household and the family as nationally appropriate	5.4.1: Proportion of time spent on unpaid domestic and care work, by sex, age and location	Labour, Employment and Training	NSSO Time Use in India, 2019
5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision making in political, economic and public life	5.5.1: Percentage of seats held by women in National Parliament and in State Legislature 5.5.2: Female labour force participation rate 5.5.3: Percentage of non-agricultural proprietary establishments owned by women	General Administration Department (GAD)	GAD NSSO & PLFS
5.6: Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the ICPD and the Beijing Platform for Action and the outcome documents of their review conferences	5.6.1: Percentage of women using modern method of Family Planning 5.6.2: Unmet need for family planning for currently married women aged 15-49 years 5.6.3: Proportion of population aged 15-49 years with comprehensive correct knowledge of HIV / AIDS	Department of Health, Medical and Family Welfare (HM&FW)	NFHS
5.a: Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources in accordance with national laws	5.a.1: Operational land holdings - gender wise 5.a.2: Proportion of female agricultural labourers 5.a.3: Wages of casual labourers (gender wise) 5.a.4: Agricultural wages (gender wise) 5.a.5: Exclusive women SHGs in Bank linked SHGs	Planning	Agricultural Census, 2015-16 NSSO NABARD, Status of Micro Finance
5.b: Enhance the use of enabling technologies, in particular ICT, to promote women's empowerment	5.b.1: Percentage of women employed in IT and ITeS industry	Information Technology and Communication (IT&C)	NSSO and PLFS
5.c: Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	5.c.1: Having Gender Budget Cell		

Annexure 5.3 Child Sex Ratio across Districts of Telangana-2011

District	Rural	District	Urban
Sangareddy	976	Mulug	1019
Mulug	969	Jangaon	978
Bhadradi	968	Medak	975
Narayanpet	953	Jogulamba	974
Siddipet	953	Kamareddy	963
Nirmal	949	Nizamabad	962
Jagtial	949	Kumaram Bheem	956
Nizamabad	948	Bhadradi	955
Khammam	948	Siddipet	951
Vikarabad	945	Nirmal	949
Rajanna	944	Vikarabad	948
Medak	944	Sangareddy	946
Kumaram Bheem	942	Suryapet	945
Medchal	940	Nagarkurnool	945
Kamareddy	938	Jagtial	945
Suryapet	933	Warangal Urban	943
Adilabad	933	Yadadi	943
Mahabubnagar	932	Karimnagar	942
Peddapalli	932	Nalgonda	941
Jogulamba	930	Khammam	938
Jangaon	929	Rajanna	937
Karimnagar	925	Mahabubnagar	936
Rangareddy	925	Medchal	934
Warangal Urban	922	Adilabad	927
Mancherial	919	Rangareddy	924
Jayashankar	918	Wanaparthi	924
Yadadi	918	Mahabubabad	917
Nalgonda	911	Hyderabad	914
Nagarkurnool	905	Warangal Rural	908
Warangal Rural	903	Peddapalli	905
Mahabubabad	901	Mancherial	900
Wanaparthi	899	Narayanpet	891
		Jayashankar	862

Source: Census 2011

Annexure 5.4 District-wise Number of Mandals Reported Child Sex Ratio Less Than 940

District	Rural Mandals	Urban Mandals
Adilabad	8	3
Bhadradi	4	3
Hyderabad	-	14
Jagtial	8	1
Jangaon	6	0
Jayashankar	9	1
Jogulamba	7	0
Kamareddy	10	0
Karimnagar	10	1
Khammam	7	2
Kumaram Bheem	7	0
Mahabubabad	14	3
Mahabubnagar	8	1
Mancherial	11	6
Medak	9	1
Medchal	2	10
Mulug	2	0
Nagarkurnool	16	1
Nalgonda	23	3
Narayanpet	3	1
Nirmal	7	1
Nizamabad	10	1
Peddapalli	8	3
Rajanna	5	2
Rangareddy	16	7
Sangareddy	3	3
Siddipet	9	0
Suryapet	15	0
Vikarabad	7	1
Wanaparthi	14	2
Warangal Rural	11	1
Warangal Urban	9	4
Yadadi	10	3
Total	288	79

Source: Census 2011

Sustainable Development Goal - 6

Clean, Safe Drinking Water and Health, Hygiene and Sanitation for All



Vision

The Vision of the Telangana State Government on water is to ensure clean drinking water and sanitation to promote health and hygiene for all. The Mission is to ensure safe and adequate drinking water supply to all uncovered (UC), partially covered (PC) and quality affected (QA) habitations. It is expected to ensure safe drinking water to all Schools and Anganwadi Centres (AWCs) also. On sanitation, the Vision is to ensure that all cities and towns to become totally clean, sanitized, healthy, and liveable, with a focus on hygienic and affordable sanitation for the urban poor and women.

The Mission for achieving the Sanitation Vision is to be achieved through generating improved awareness about sanitation and its linkages with public environmental health and climate change recognizing different impacts on men and women amongst communities and institutions; to promote mechanisms to bring about sanitary practices and hygiene behavioural changes.

Achievements

- 2019-20 SDG India Index Score for Goal 6 ranges between 69 and 96 for States and between 61 and 100 for Union Territories (UTs). Telangana is in the league of front-runners with a score of 85.
- In urban and rural areas, in 2019-20, all the households are connected by a tap in the premises; nearly 84 percent of the population have safe and adequate drinking water in their premises.
- Twenty-eight ULBs are supplied with 135 LPCD drinking water supply in 2019-20 and the target for 2022-23 is 38 ULBs

- Out of 139 ULBs, 57 ULBs have functional liquid waste management system. In 2019-20, 2,20,855 Individual Household Latrines (IHHLs) are constructed to achieve ODF status
- Hundred percent of the households in the State are covered under piped water supply (PWS) connection as on January 15th 2021 Jal Jeevan Mission (JJM)
- Around 97 percent of households in rural areas and 99.9 percent of households in urban areas have improved source of drinking water within 30 mts for a round-trip collection time
- Net groundwater availability for future irrigation needs is 12.83 bcm. The overall SGD in the state ranges from 14.55 percent to 93.62 percent
- As compared to GEC 2020 assessment, total annual ground water recharge of the state has increased from 16.63 to 23.14 bcm. This is mainly due increase in recharge from 'Other sources.
- The annual extractable ground water resources has increased from 15.03 to 20.92 bcm. The overall SGD decreased from 53.32% to 38.65%.
- In the "Swachh Survekshan Grameen Awards – 2019" (SSG 2019), Telangana has been ranked the No.2 State in the Southern Zone

Challenges

The challenges include promotion of water saving measures, inculcating safe hygiene practices, conducting water audits, recycling and reuse of water for productive purposes, maintenance of public taps surroundings and public sanitation

facilities, provision of drinking water and sanitation facilities in the educational institutions, construction of separate toilets for girls and boys in the educational institutions.

6.1 The Context

Safe Drinking Water for All

Across the globe, while substantial progress has been made in increasing access to clean drinking water and sanitation, billions of people mostly in rural areas – still lack these basic services. Worldwide, one in three people do not have access to safe drinking water, two out of five people do not have a basic hand washing facility with soap and water and more than 701 million people still practice open defecation (OD). Across the globe, 2.2 billion people lack safely managed drinking water in 2017, 4.2 billion people lack safely managed sanitation, 3 billion people lack basic hand washing facilities at home, and water scarcity could displace 700 million people by 2030. In addition, some countries experience a funding gap of 61 percent for achieving water and sanitation targets (un.org- sustainable development goals).

The Coronavirus disease 2019 (Covid-19) pandemic has demonstrated the critical importance of sanitation, hygiene and adequate access to clean water for preventing and containing diseases. Hand hygiene saves lives. According to World Health Organisation (WHO), hand washing is one of the most effective actions one can take to reduce the spread of pathogens and prevent infections, including the Covid-19 virus. Yet billions of people still lack safe water and sanitation and funding is inadequate (un.org- sustainable development goals).

In case of India, though it has the world's largest population, a mere four percent of potable water is available. Around 600 million Indians face high to extreme stress and by 2030; the country's water demand is projected to be twice the available supply leading to severe water scarcity. The government is committed to provide safe and adequate drinking

water to all habitations by 2022. The National Rural Drinking Water Programme (NRDWP) has already provided 81.07 percent rural habitations with access to 40 litres of drinking water per capita per day (LPCD) and another 15.58 percent with partial access. The target is to provide piped water connectivity by 2024 under the recently launched Jal Jeevan Mission (SDG India Index Report, NITI Aayog, 2019, 2024).

Fluoride contamination in groundwater is observed in 19 states and 184 districts, high levels of arsenic contamination in 26 districts in Bihar, Chhattisgarh, West Bengal and Uttar Pradesh, high concentration of iron in groundwater in more than 1.1 lakh habitations, and high concentration of nitrates spread across districts in 15 states. In case of surface water, out of 37 Indian States and Union Territories, in 2018, 31 have polluted river stretches, 351 polluted stretches identified on 323 rivers (SDG India Index Report, NITI Aayog, 2019, 2024).

Swachh Bharath Mission (SBM) covers all rural and urban areas and has achieved the target of making all rural and urban areas of India open defecation free (ODF) by 2nd October 2019. While sanitation coverage was around 39 percent in 2014, the country has achieved 100 percent sanitation coverage in rural areas by 2019 due to SBM (The Economic Times, 2019). Nearly, 6 million villages, 633 districts and 35 States/UTs have been verified to be ODF by December 2019 (SDG India Index Report, NITI Aayog, 2019).

At the all India level, NITI Aayog 2023-24 report shows that 100 percent of districts in India are verified to be ODF, 100 percent households with toilets in rural areas, 97.2 percent in urban areas (NITI Ayog, 2019), 99.29 percent of households have improved source of drinking water, 11.23 Blocks of the country are over-exploited (OE), 94.7 percent of schools have separate functional toilet for girls, 87.62 percent of polluting industries comply with Central Pollution Control Board (CPCB) norms for waste water treatment (NITI Ayog, 2019)

Section I elicits information on the centrally sponsored and state sponsored programmes implemented by the Telangana state for sustainable

management of water and sanitation for all and Section II examines the performance of the state in connection with the SDG 6 targets.

SECTION - I

Sustainable Management of Water and Sanitation: The Telangana Experience

The Telangana State Government has initiated various programmes for sustainable management of water and sanitation across all the districts. As provision of water is a state subject, NRDWP, Ministry of Jal Shakti provides technical and financial assistance to the state. NRDWP is a centrally sponsored scheme aimed at improving the coverage of adequate and safe drinking water to the rural areas.

Safe Drinking Water

The Mission of the Telangana State Government is to provide safe and potable drinking water to all the households. Government of Telangana (GoT) has taken up Telangana Drinking Water Supply Project (TDWSP) named “Mission Bhagiratha” as one of the flagship programmes of the State with a commitment to provide safe, adequate, sustainable and treated drinking water for the entire rural and urban areas of the State, except Hyderabad urban agglomeration inside Outer Ring Road (ORR). Mission Bhagiratha was launched to ensure that no member of the household, especially the women, is compelled to walk to fetch water. Through This *Intiintiki Nalla* Scheme, the intent is to supply piped drinking water to each of the 80 lakh households in the State and this project (GoT, 2021; 2023, 2024). The mission envisages supply of treated drinking water to each and every household at the rate of 150 LPCD (Municipal Corporations), 135 LPCD (Municipalities/Nagar Panchayats) and 100 LPCD (Rural area), catering to the demand for next 30 years i.e., up to 2048.

The project is divided into 26 segments based on the topography, commandability, proximity and ease of connectivity from various dependable sources. Administrative sanctions was accorded for

Rs. 46123.26 Cr, the funds are raised by creating separate company named Telangana Drinking Water Supply Corporation Limited (TDWSQL) by borrowing loans from the financial Institutions/banks with government guarantee. The Project contemplates to draw about 59.94 thousand million cubic (TMC: including 3.92 TMC from Hyderabad Metropolitan Water Supply and Sewerage Board (HMWSSB) Yellampally line) of water @ year 2018 (86.11 TMC @ year 2048) from rivers Krishna and Godavari and major reservoirs fed by these rivers. The Government vide G.O.Rt.No.885, Dt: 30.10.2017 have allocated 23.44 TMC from Krishna basin sources and 32.58 TMC from Godavari Basin sources for Mission Bhagiratha for the year 2018 duly fixing Minimum Draw Down Levels (MDDLs) for each reservoir.

All the targeted 23,968 rural habitations and 120 Urban Local Bodies (ULBs) are covered with surface treated water in the entire state by constructing nineteen intake structures, fifty new water treatment plants, 49,702 Km transmission networks, etc., in addition to the available existing system. Intra village system is the last mile connectivity and is the critical part of the project. It involves providing robust, scientifically designed modern distribution network in each habitation. Out of 18,795 new overhead water storage reservoirs (OHSRs), 18609 are completed, 53,314 kms. of intra distribution pipe line is laid and 55.6 lakh household connections are completed. All the habitations targeted are supplied with potable piped water supply through the functional household tap connection except 126 isolated habitations which are located in forest areas, which are also targeted to be completed by end of 2020.

For the supply of water distribution network in the peripheral circles of Hyderabad city, Urban Mission Bhagiratha Project (UMBP) in Hyderabad City was launched with a sanction of Rs. 1900 crores to create 56 new storage reservoirs with 280 million liters capacity along with laying down of 2100 pipeline network. Around 35 lakh people residing in the circles of Kapra, Uppal, Alwal, Gaddiannaram, LB Nagar, Kukatpally, Patancheru, Rajendranagar, R.C.Puram, Serilingampally have benefited from this project. Another component of this project provided water supply to 190 villages/habitations with 10 lakh population within ORR limits. The project cost was Rs.628 crores which was sanctioned under the Annuity Mode of contract to develop OHSRs/OBSRs of pipeline network to provide house service connections.

An amount of Rs. 3.98 crores, which is funded by Housing and Urban Development Corporation Limited (HUDCO), and state government budget is sanctioned to divert River Godavari water to Manjira/Singur system. This will enable reliable supply of water to those areas that are fed by Manjira/Singur system.

Another programme initiated by the Telangana state government, is the Water Leadership and Conservation (WaLC) Programme that focuses on conservation of water and reduction in wastage of water by working with stakeholders like Non-Governmental Organizations (NGOs), Information Technology (IT) sector employees, Citizen Clubs.

Rain Water Harvesting Theme Park (RWHTP) provides live demonstration of the construction and benefits of rain harvesting pits in their homes/premises. Up to 2022-23, 121 urban habitations, 23,975 rural habitations and 57.01 households are covered under Mission Bhagiratha.

Water Supply Schemes

Out of the total 140 ULBs, water supply schemes in 61 ULBs are being executed by Public Health Municipal Engineering (PHME) Department, in 7 ULBs within the ORR are being executed

by HMWSSB and balance schemes in 72 ULBs (before constitution of new ULBs) were executed by Rural Water Supply and Sanitation (RWS&S) Department.

Water Supply Schemes in 12 ULBs have been taken up under Atal Mission for Rejuvenation and Urban Transformation (AMRUT) programme with a total estimated cost of Rs. 1753 Crores. Ninety percent of work has been completed. Water Supply Schemes in 7 ULBs have been taken up under Telangana Municipal Development Project (TMDP) with support from the World Bank, with a total estimated cost of Rs. 406 Crores. Water supply schemes in four towns i.e. Manuguru, Armoor, Jammikunta and Huzurabad Schemes are completed, and the remaining three Schemes at Medak, Kollapur and Kothagudem are nearing completion. One scheme in Sircilla town has been taken up at a cost of Rs.61.00 Crores with Telangana Urban Finance and Infrastructure Development Corporation (TUFIDC) assistance and is completed. Water supply schemes under Annuity mode of contract in 5 towns are taken up at an estimated cost of Rs.164.00 Crores. Integration of existing water supply network in all ULBs with Mission Bhagiratha Water Grid is completed.

Groundwater Situation in Telangana State

As per the latest Groundwater Estimation Committee (GEC) 2023 assessment (as on March, 2023), total annual Groundwater recharge of the state has been assessed as 23.14 bcm and annual extractable Ground Water resource as 20.92 bcm. The current annual groundwater extraction for all uses is 8.09 bcm (domestic and industrial extraction: 0.84 bcm and irrigation extractions: 7.24 bcm) and Stage of Groundwater Development (SGD) is 38.65 %. Net groundwater availability for future irrigation needs is 12.83 bcm. The overall SGD in the state ranges from 14.55 percent to 93.62 percent (Reddy 2022; CGWB 2024).

As per the latest GEC 2023 assessment, out of 612 assessment units (Mandals), 11 units (1.80%) have been categorized as 'Over Exploited', 10

units (1.63%) as 'Critical', 61 units (9.97%) as 'Semi-Critical' and 530 units (86.60%) as 'Safe'. Similarly, out of 105777.24 sq km recharge worthy area of the State, 156.44 sq km (0.15%) area are under 'Over Exploited', 605.70 sq km (0.57%) under 'Critical', 8510.64 sq km (8.65%) under 'Semi-critical', 96504.46 sq km (91.23%) under 'Safe' categories of assessment units. Out of total 20920.92 mcm annual extractable ground water resources of the State, 20.08 mcm (0.10%) are under 'Over Exploited', 97.23 mcm (0.46%) under 'Critical', 1268.76 mcm (6.06%) under 'Semi Critical' and 19534.85 mcm (93.37%) are under 'Safe' categories of assessment units.

As compared to GEC 2020 assessment, total annual ground water recharge of the state has increased from 16.63 to 23.14 bcm. This is mainly due increase in recharge from 'Other sources'. The annual extractable ground water resources has increased from 15.03 to 20.92 bcm. The overall SGD decreased from 53.32% to 38.65%. This can be attributed to government interventions like water conservation activities under Mission Kakatiya, improvement in surface water irrigation and drinking water supply under Mission Bhagiratha etc., (Reddy 2022; CGWB: 2022, 2024).

The state is divided into two River basins and 19 sub-basins of major and minor rivers. These 19 sub-basins are further sub divided into 502 groundwater watersheds having an average area of ~200 Km², based on drainage, geomorphology and hydrogeology. The SGD has increased from 36 percent to 65 percent during the period 1985 to 2017 (Reddy et.al. 2016; Reddy 2018; and Reddy 2022).

Mission Kakatiya

In 2014, the Telangana state Government launched Mission Kakatiya to revive and harvest the benefits of tank irrigation by increasing the command area, water available for irrigation, and opportunities for agriculture. One of the major slogans of the movement for a separate Telangana state was "*Mana Ooru Mana Cheruvu*" (our village,

our tank), which later became the catchphrase for Mission Kakatiya. The five-year programme intends to uphold the vision of the Kakatiyas by reviving and restoring minor irrigation (MI) tanks to use 7.5 billion cubic meters (BCM) of water allocated for MI in the Godavari and Krishna-river basins to irrigate 20 lakh acres. The tanks are linked through a chain of canals restoration of link tanks (*Golusu Kattu Cheruvulu*).

Mission Kakatiya, a flagship programme of the state, is aimed at improving the groundwater table, reducing the power consumption by farm sector, getting higher yields, spurring the growth of livestock and rejuvenating rural economy. Under Mission Kakatiya, the state has allocated a budget of about Rs.14,000 crore per year, with the objective of harvesting rain water, rejuvenating collection and storage systems, and recharging groundwater. More than one lakh water bodies (old tanks during the Kakatiya Empire) were restored.

The main objective of Mission Kakatiya is to revive minor irrigation by desilting tanks to increase their water storage capacity and repairing sluices, weirs, and irrigation canals. The project has also impacted groundwater irrigation through increased recharge of groundwater from tank seepage. Field data shows a positive change in tank irrigated areas for all tank sizes, according to the The International Water Management Institute (IWMI) - TATA Water Policy Research Programme, which led field studies in 2015, 2016, and 2017 that consistently reported increases in irrigated areas and cropping intensity (CI). There is a change in rice paddy area before and after programme implementation in study villages in the Nirmal and Warangal districts. Field surveys also suggest the silt application resulted in higher crop yields and lower costs of cultivation, and farmers reported increased availability of water in wells. A survey by the state groundwater department found groundwater levels increased in 22 of the 31 districts (The Hindu 2017). The IWMI-TATA Programme field studies reported increases in non-crop incomes such as fishing, cattle herding, and fermented beverages known as toddies (Shah, Bharti, and Verma 2017).

A NABCONS (2017) assessment showed a 62 per cent increase in fish production in the tanks.

Sanitation

Introduction of Central Rural Sanitation Programme (CRSP) in 1986, subsequently, its conversion to Total Sanitation Campaign (TSC) in 1999 helped in the increase of the coverage of household toilets to around 33 percent according to Census 2011. Nirmal Bharath Abhiyan (NBA) succeeded TSC with a major aim of accelerating sanitation coverage in rural areas to achieve Nirmal status by 2022 in all the village Panchayats in the country.

Swachh Bharat Mission (SBM), launched on 2nd October 2014 by replacing NBA, was a centrally sponsored scheme and it had two components – the SBM Rural and SBM Urban. It also goes beyond the construction of toilets and includes solid and liquid waste management.

Under this mission it is planned that all the households in all the Gram Panchayats (GPs) will have toilets on saturation basis so that nobody should go for open defecation. Swachh Bharat Mission- Gramin (SBM-G) is a comprehensive total sanitation scheme at the level of GPs and the State Government focuses on integrated sanitation by taking up of construction of Individual Household Latrines (IHHLs), community toilets and Solid and Liquid Resource Management (SLRM) by adopting the approach of integrated Sanitation in GPs and become 'Swachh Telangana' in line with 'Swachh Bharat' by 2nd October, 2019. As part of Swachh Bharat Mission massive drive has been taken up to attain ODF Telangana. As a result, incidence of diseases reduced, dignity of women enhanced, enrolment of school going adolescent girls increased, and there is a substantial improvement in rural thrift. 96.32 per cent IHHLs were constructed to ensure sanitation. In the "Swachh Survekshan Grameen Awards – 2019" (SSG 2019), Telangana has been ranked the No.2 State in the Southern Zone. Peddapalli district from Telangana has been ranked the No.1 district across the country in performance. This

ranking was done based on a comprehensive set of parameters including surveys of public places like schools, Anganwadis, Primary Health Centres (PHCs), Haat/Bazaars, Panchayat and citizen's perception of services (GoT, 2020). 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 (GoT, 2021).

Rural sanitation was accorded the utmost importance to provide quality and healthy life—ODF Telangana programme for improving cleanliness and sanitation. The efforts put in by the government by massive drive and awareness programme could achieve the ODF status in all the districts. Under this programme, 96.32 percent of houses were covered with IHHLs on a saturation basis. The awareness created has helped in ensuring that the latrines are not only constructed but were also used. Consequently, the villages have become cleaner, contributing to a healthy and enhanced quality of life.

Under the Palle Pragathi Programme (PPP), complete sanitation in the GPs is undertaken using scientific methods of collection, disposal and management of solid and liquid waste. In majority of GPs dump yards and compost pits with sheds have been constructed. Further, household, institutional and community soak pits have been sanctioned on a large scale in the GPs. In the second phase of the Palle Pragathi programme, households have been identified under the 'no one left behind' category and IHHLs have been sanctioned to these households. In order to support rural sanitation, potential donors are identified and contacted to support GPs in terms of financial contributions.

During Phase - I of the Palle Pragathi programme held during September – October 2019, debris was removed from nearly 94 percent of houses and open places, 98 percent of sites are cleared of thorny bushes and wild plants, 82 percent of defunct wells are filled, 96 percent of unused bore wells are closed, 98 percent of the insanitary areas have

been sprayed bleaching and lime powder. In the second phase which took place for the first fifteen days in January, 2020, 98 percent of the roads are cleaned, 98 percent of drains are desilted, debris removal in 97 percent of the households and open places, 99 percent of the sites are cleared of bushes and wild plants, 92 percent of defunct wells and unused borewells are filled and closed respectively. Around 98 percent of sites are bailed out of stagnant water. Nearly 99 percent of pot holes are filled, almost 100 percent of public institutions and places are cleaned and 99 percent of shandies and market places are cleaned. The Pattana Pragathi programme (a mission for enhancing liveability of towns in Telangana) launched in February, 2020 aims to make urban areas clean with excellent greenery and sanitation facilities. Under this programme, activities like cleaning of bushes, removal of debris on road margins, drain cleaning, cleaning of open plots, public places and institutions, identification of public toilet spaces, removal of dilapidated buildings, closing the non-functioning wells are undertaken. The second phase of the Pattana Pragathi programme (Sanitation Drive) was conducted in June 2020. The Government is releasing about Rs. 148 crore every month towards this programme.

Underground Drainage (UGD)

A total of 11 UGD Schemes have been taken up by the Public Health & Municipal Engineering (PH&ME) Department with a total estimated cost of Rs.1235.68 crores. Three UGD Schemes (Vikarabad, Karimnagar and Nizamabad) have been completed with a total cost of Rs.447.45 Crores. One UGD Scheme, at Siddipet, has been taken up with an overall estimated cost of Rs. 266.32 Crores with fund convergence from Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and Telangana Urban Finance and Infrastructure Development Corporation (TUFIDC) Loan and achieved 70 percent progress. Out of two Sewage Treatment Plants (STPs), construction of one STP is completed. Two UGD Schemes (Nalgonda and Miryalguda) are being executed with a total

estimated cost of Rs.168.30 crores under State Plan Grants (SPG). STPs are in commissioning stage and will be operational very soon. UGD Schemes for Khammam, Suryapet, Nagarkurnool, Gajwel-Pragynapur and Devarakonda are taken up with a cost of Rs.353.61 crores which are under progress. Water Supply Improvement Schemes (Balance works) in 38 ULBs are taken up at an estimated cost of Rs.1433.00 Crores. On completion of the water supply projects under Mission Bhagiratha-Urban, AMRUT and Telangana Municipal Development Project (TMDP), hundred percent of coverage of households in all the ULBs will be achieved. With huge investment made in development of Water Supply schemes in the ULBs of Telangana, generation of Sewage (nearly 80% of water supply) in these towns is imminent. In order to create Safe, Hygienic and Sustainable Towns in Telangana, the provision for efficient Urban Sewage and Septage Infrastructure becomes inevitable. Detailed Project Reports (DPRs) for the Sewerage and Storm Water Drainage Schemes (SSWDS) in 59 ULBs are prepared with TMDP funds. The Government of Telangana is planning to take up SSWDS in all ULBs (including newly constituted ULBs), in a phased manner. To take up construction of STPs with UGD network in the 30 towns coming in the polluted reaches of 4 river stretches on priority basis at an amount of Rs. 2828.24 Crores as per the directions of the Hon'ble National Green Tribunal (NGT).

Sewerage

With rapid urbanization in Telangana and provision of more than 135 LPCD water supply, the treatment of urban sewerage has now become high priority. The Government have planned for providing comprehensive Sewerage and Storm Water Infrastructure (SSWI) for 100 percent coverage across all ULBs. This would also include environmentally safe and fully compliant treatment facilities in all ULBs. Action Plan towards achieving the vision for the next 3 to 15 years is to implement extensive Information, Education and Communication (IEC) activities:

1. For Beautification of Musi River and to prevent communicable seasonal diseases through breeding of mosquitoes the river course of Musi between Bapughat to Nagole 20 km stretch in Hyderabad was cleaned by deploying hydraulic excavators and removed light jungle, installed three mosquito killing machines and ten fogging machines are utilised for carrying out fogging operations along Musi Course; and
2. Tenders are invited for deploying two brand-new heavy-duty long reach excavator and brand-new excavator and Pontoon mounted excavator for cleaning of Musi River throughout the year.

SECTION - II

Sustainable Development Goal 6

The Sixth Sustainable Development Goal (SDG-6) is about ensure availability and sustainable management of water and sanitation for all. It is to

ensure clean water and total sanitation for all as to promote health and hygiene among all.

Table 6.1 Target Dimensions

Target	Target dimension	Goal of each Target by 2030
6.1	Achieve universal and equitable access to safe and affordable drinking water for all	Rural, Urban
6.2	Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	Rural, Urban
6.3	Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Groundwater
6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Surface water
6.5	Implement integrated water resources management (IWRM) at all levels, including through transboundary cooperation as appropriate	International cooperation
6.6	Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Ecosystems
Means of implementation		
6.a	Expand international cooperation and capacity-building support to developing countries in water and sanitation related activities and programmes, including water harvesting, desalination, water use efficiency, wastewater treatment, recycling and reuse technologies	International cooperation and capacity building programmes
6.b	Support and strengthen the participation of local communities in improving water and sanitation management	Participation of local communities through regional and sub-regional workshops, interactions and bottom-up approach

Source: United Nations Development Programme (UNDP)

At the global level, around 785 million people lack access to basic drinking water service. In 2017, despite 45 percent of the global population having access to safely managed sanitation services, around 700 million were resorting to open defecation. With respect to hand washing facilities, 3 billion people lacked the required facilities at home (NITI Aayog, 2019).

At the national level, nearly 91 percent of the districts in India are verified to be ODF. In rural areas, 100 percent of the households have toilets while it is 97 percent in urban areas. Separate toilet for girls is available in 97 percent of schools. Around 96 percent of households are provided with improved source of drinking water and 18 percent of the blocks in the country are over exploited (OE). Nearly 88 percent of the polluting industries adhere to norms given by CPCB for waste water treatment.

2019-20 SDG India Index Score for Goal 6 ranges between 69 and 96 for States and between 61 and 100 for Union Territories (UTs). Telangana is in the league of front-runners with a score of 85. Among the South Indian States, Andhra Pradesh, Tamil Nadu and Karnataka have a higher score than Telangana while Kerala is below Telangana.

6.2 SDG 6-Targets and Indicators

Target 6.1: *By 2030, Achieve Universal and Equitable Access to Safe and Affordable Drinking Water for All*

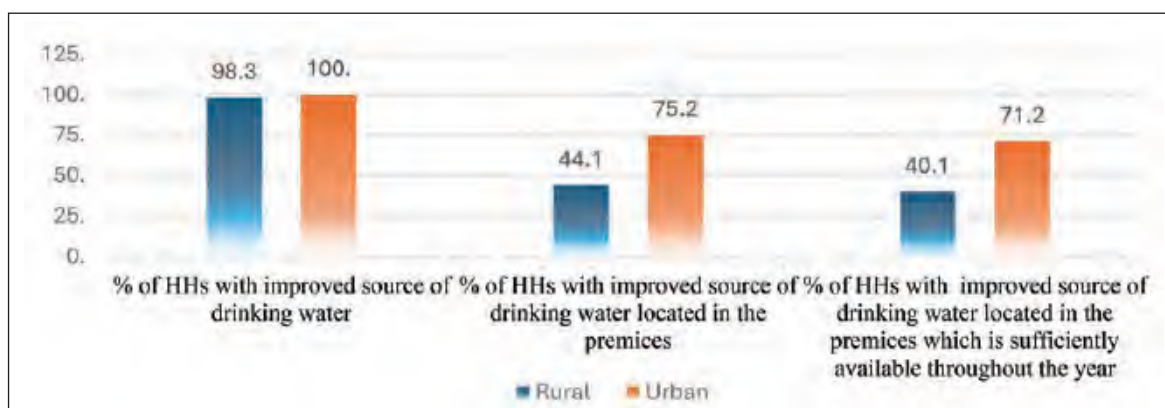
In urban and rural areas, in 2019-20, all the households are connected by a tap in the premises; nearly 84 percent of the population have safe and adequate drinking water in their premises. Twenty-eight ULBs are supplied with 135 LPCD drinking

water supply in 2019-20 and the target for 2022-23 is 38 ULBs (*Annexure 6.1*). Out of 139 ULBs, 57 ULBs have functional liquid waste management system. In 2019-20, 2,20,855 Individual Household Latrines (IHHLs) are constructed to achieve ODF status (*Annexure 6.2*).

Hundred percent of the households in the state covered under piped water supply (PWS) connection as on January 15th 2021 Jal Jeevan Mission (JJM) Dashboard. According to the National Sample Survey Organisation (NSSO) Survey on Drinking water, Sanitation, Hygiene and Housing condition in India, 2018, 98.3 percent of households in rural areas and all the households in urban areas have access to improved source of drinking water⁶⁴ (Table 6.2). Among the households which have access to improved source drinking water, only 44.1 and 75.2 percent of households have it in their premises and around 40.1 and 71.2 percent of households reported to have it in their premises and is sufficiently available throughout the year in rural and urban areas respectively (Figure 6.1). Around 97 percent of households in rural areas and 99.9 percent of households in urban areas have improved source of drinking water within 30 mts for a round-trip collection time as per the survey. Thus, almost all the households who have the access to improved source of water with in their premises are getting adequate water throughout the year both in rural and urban areas. More than 50 percent of rural households need to be given the access within the households while it is 25 percent in urban areas. Almost all the households in rural and urban areas who are not having the access within the premises reported 30 mts as the round – up collection time to fetch the water.

64 In this survey, the information on principle source of drinking water of the household was collected in terms of the seventeen categories as mentioned in paragraph 3.4.1. out of these seventeen categories, the sources (i) bottled water, (2) Piped water into dwelling, (iii) Piped water to yard/plot, (iv) Piped water from neighbour, (v) Public tap/stand pipe, (vi) Tubewell, (vii) Hand pump, (viii) protected well, (ix) Public tanker truck, (x) Private tanker truck, (xi) Protected spring and (xii) Rainwater collection are considered as improved source of drinking water.

Figure 6.1 Percentage of HHs having Access to Improved Source of Drinking Water Located in the Premises and Water Sufficiency Available Throughout the Year



Source: GoI (2019), *Drinking water, Sanitation, Hygiene, and Housing Condition in India – 2018*, NSSO 76 Round, MoSPI, Report No. 584 (76/1.2/1). July 2018- December 2018.

Table 6.2 Distribution of HHs by Principle Source of Drinking Water in Telangana - 2018 (%)

Source	Telangana			All- India		
	Rural	Urban	Rural + Urban	Rural	Urban	Rural + Urban
Bottle water	26.3	31.4	28.7	4.0	12.2	6.8
Piped water into dwelling	4.2	26.2	14.5	11.3	40.9	21.4
Piped water to yard/plot	31.1	32.0	31.6	10.3	16.0	12.3
Piped water from neighbourhood	1.0	1.6	1.2	1.0	1.0	1.0
Public tap/stand pipe	19.8	2.6	11.8	10.3	7.1	9.2
Tube well	6.1	4.3	5.3	10.9	10.4	10.7
Hand pump	7.6	0.3	4.2	42.9	6.7	30.5
Protected well	2.1	0.0	1.1	2.9	1.7	2.5
Un protected well	1.7	0.0	0.9	4.4	2.4	3.7
Public tanker truck	0.1	1.6	0.7	0.1	0.8	0.3
Private tanker truck	0.0	0.0	0.0	0.4	0.5	0.4
Protected spring	0.0	0.0	0.0	0.3	0.1	0.2
Unprotected spring	0.0	0.0	0.0	0.3	0.0	0.2
Rainwater collection	0.0	0.0	0.0	0.2	0.0	0.2
Surface water: tank/pond	0.0	0.0	0.0	0.4	0.0	0.3
Surface water: other	0.0	0.0	0.0	0.3	0.0	0.2
Others	0.0	0.0	0.0	0.2	0.2	0.2
All	100	100	100	100	100	100

Source: GoI (2019), *Drinking water, Sanitation, Hygiene, and Housing Condition in India – 2018*, NSSO 76 Round, MoSPI, Report No. 584 (76/1.2/1). July 2018-December 2018.

Target 6.2: *By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.*

Around 98 percent of the industries complied with the waste water treatment in 2019-20 and the target is 100 percent for 2022-23. Five ULBs have functional sewerage treatment plant and the target is to make 30 ULBs with functional sewerage treatment plant by 2030. 772 million litres of sewage water per day (MLD) capacity is generated in the urban households under sewerage network in 2019-20 and nearly 24 percent of waste water treatment capacity is generated (*Annexure 6.3*).

Percentage of districts with groundwater withdrawals more than 90 percent of the annual extractable groundwater resource (including agriculture) in 2018 includes 23.5 percent of Mandals and 17.5 percent of watersheds (*Annexure 6.4*). Nearly 43 percent of developed irrigated command area is brought under Water User Associations (WUAs) in 2019-20 (*Annexure 6.6*).

6.3 The Way Forward

The policy initiatives of the state government should orient towards promotion of water saving measures, recharging the groundwater and encourage rainwater harvesting (RWH) on a larger scale. More awareness campaigns are to be conducted for the use of clean, safe and treated drinking water supplied to the households under the Mission Bhagiratha project. There is also a need for financial allocations, monitoring and evaluation of access and judicious water resource allocations.

In order to bring water use efficiency across all sectors, especially industries, there is a need to

conduct water audit which would help reduce water wastage. Along with this initiative, it also becomes necessary to recycle and reuse water wherever possible.

Behavioural changes in attitudes of the population with regard to hygiene practices (hand washing and menstrual hygiene) and sanitation practices have to be brought about through Information, Education and Communication (IEC) activities. Safe sanitation facilities in terms of proper disposal arrangements have to be in place for the households. Proper maintenance and upkeep of public sanitation facilities need to be accorded high priority keeping in view the floating and migrant population who access these public toilets. This entails proper operation and maintenance practices. Hygiene maintenance of sanitation facilities in educational and health institutions requires utmost attention of the government.

In October 2020, the city of Hyderabad experienced the highest rainfall of 200 mm causing submersion of most parts of the city. Damages to property was to the tune of Rs.1800 crore and 80 deaths were reported. There is an urgent need to provide alternative storm water management techniques that protect local water bodies, result in groundwater infiltration which would ultimately lead to avoidance of urban flooding.

Principles of water sensitive design and planning need to be in place as urban areas get expanded. Initiatives should be towards plan and design of parks and open spaces for infiltration.

Plantation under Telanganaku Haritha Haram (THH) a flagship programme to improve green cover, to prevent soil erosion, to improve infiltration and improvement of groundwater along with maintenance of ecological balance.

Annexure 6.1 Affordable Drinking Water (Target - 6.1)

National Indicator	State Indicator Framework (SIF)	Base value 2020	Target		
			2022	2025	2030
6.1.1: Percentage of population having safe and adequate drinking water within their premises.	Percentage of Urban households connected by a tap in the premises/ Coverage of household connections	100.00		-	-
6.1.1: Percentage of population having safe and adequate drinking water within their premises.	Percentage of population having safe and adequate drinking water within their premises.	83.59	100.00	-	-
6.1.1: Percentage of population having safe and adequate drinking water within their premises.	Percentage of Urban households connected by a tap in the premises/ Coverage of household connections	64.00	100.00	-	-
6.1.1: Percentage of population having safe and adequate drinking water within their premises.	Percentage of ULBs with 135 LPCD drinking water supply	28.00	38.00	-	-
6.1.2. Percentage of population using an improved drinking water source (Rural)	Percentage of Rural households connected by a tap in the premises/ Coverage of household connections	100.00	-	-	-
No. of Habitations Affected by Drinking Water Quality	No. of Habitations Affected by Drinking Water Quality	0.00	-	-	-
No. of Habitations Drinking Water - Fully Covered (>55 LPCD)	Habitations Drinking Water - Fully Covered (FC) >55LPCD	93.37	100.00	-	-
No. of Habitations Drinking Water - Partially Covered (0.1 to 55 LPCD)	No. of Habitations Drinking Water - Partially Covered (PC) (0.1 to 55 LPCD)	0.00	-	-	-

SIF: State Indicator Framework; LPCD: Litre per capita per day; ULBs: Urban Local Bodies

Annexure 6.2 Sanitation and Hygiene (Target - 6.2)

National Indicator	State Indicator Framework SIF)	Base Value 2020	Target		
			2022	2025	2030
6.2.3. Proportion of schools with separate toilet facility for girls					
Total number of Households with IHHL	Total number of Households with IHHL	100	100	100	100
ULBs having Liquid Waste Management System	ULBs having Liquid Waste Management System	41% Total ULBs:139 ULBs with unctional Liquid waste management system: 57	50	70	100

National Indicator	State Indicator Framework SIF)	Base Value 2020	Target		
			2022	2025	2030
6.2.2. Percentage of Districts achieving Open Defecation Free (ODF) target.					
No. of Individual Household Latrines (IHHLs) Constructed to Achieve ODF Status	No. of IHHLs constructed to achieve ODF Status	2,20,855	2,56,418	3,75,495	7,77,118

SIF: State Indicator Framework; ULBs: Urban Local Bodies; ODF: open-defecation free

Annexure 6.3 Waste Water Treatment (Target - 6.3)

National Indicator	State Indicator Framework (SIF)	Base Value 2019-20	2022	2025	2030
6.3.2. Percentage of industries (17 category of highly polluting industries/grossly polluting industry/red category of industries) complying with waste water treatment as per CPCB norms.	Percentage of industries (17 category of highly polluting industries/grossly polluting industry/red category of industries) complying with waste water treatment as per CPCB norms.	98.1	100	100	100
6.3.3. Proportion of waste water treatment capacity created <i>vis-à-vis</i> total generation	No. of ULBs having a functional STPs	6	5	30	25
6.3.3. Proportion of waste water treatment capacity created <i>vis-à-vis</i> total generation	Proportion of Urban households covered under sewerage network (%)	8	30	75	100
6.3.3. Proportion of waste water treatment capacity created <i>vis-à-vis</i> total generation	Urban households covered under sewerage network (in MLD)	772 Capacity against 1850 sewage generation	772	2057.50	2057.50
6.3.3. Proportion of waste water treatment capacity created <i>vis-à-vis</i> total generation	Proportion of waste water treatment capacity <i>created vis-à-vis</i> total generation (%)	24	37	80	100

SIF: State Indicator Framework; CPCB: Central Pollution Control Board; ULBs: Urban Local Bodies; STPs: Sewage Treatment Plants; MLD: million litres of sewage water per day

Annexure 6.4 Groundwater (Target - 6.4)

National Indicator	State Indicator Framework (SIF)	2020	Target		
			2022	2025	2030
6.4.1. Percent of groundwater withdrawal against availability	Stage/Level of Groundwater Development/Extraction (SGD)	53.32%	38.65% *	-	-
Extent of non-revenue water	Extent of Non-Revenue Water	35	5	5	10

*SIF: State Indicator; NA: Not Applicable *SGD as per GEC 2023*

Annexure 6.5 Lakes and water bodies (Target - 6.5)

National Indicator	State Indicator Framework (SIF)	2020	Target		
			2022	2025	2030
6.6.1. Area under Over-Exploited Blocks/Mandals	Over Exploited (2.20% of State Geographical area i.e., 8253 Km covering 13 Mandals out of 594 Mandals)	7.4 % *	1.80% **	-	-
6.6.2. Percentage sewage load treated in major rivers					
Conservation of Lakes and Water bodies	Conservation of Lakes and Water bodies	0 (0.0)	137 (25%)	274 (50%)	549 (100%)

SIF: State Indicator; **NA:** Not Applicable

* Over Exploited as per GEC 2020 (44 Mandals out of 589 Mandals)

** % Over Exploited Mandals as per GEC 2023 (11 Mandals out of 612 Mandals)

Annexure 6.6 Irrigated Command Area (Target - 6.6)

National Indicator	State Indicator Framework (SIF)	2020	Target		
			2022	2025	2030
6. b.1. Percentage of developed Irrigated Command Area brought under WUAs	Percentage of developed Irrigated Command Area brought under WUAs	42.60 (Since 06.2014 - the formation day of the State)	31.14	3.06	

SIF: SIF: State Indicator; **WUAs:** Water Users Associations

Sustainable Development Goal - 7

Ensure Access to Affordable, Reliable, and Sustainable Modern Energy for All



Vision of Government of Telangana

To ensure 24x7 quality, reliable, and affordable power supply to all Households, Commercial Businesses, Public need, Industry, and adequate power to Agriculture Farm Holdings.

Achievements

- The power situation of the state improved from power deficit state at the time of formation to provider of 24x7 power to all sectors including free 24x7 power to agriculture
- Large capacity addition programs are under way which would add 11,612 MW to existing 16,261 MW
- Significant capacity addition in areas of Renewable Energy in recent years (Increase in installed capacity from 1230.21 MW in Jan. 2017 to 4357.77 MW in Nov. 2020)
- The State stands third in the Country in terms of generation of solar energy (503.74 MU in Nov.2020)
- Per capita consumption of Telangana was 2071 kWh in 2019-20, among top five in the general category states
- As per the recent NFHS 5 (2019-20) 91.8 per cent of households are using clean cooking fuel
- Telangana stood 2nd in terms of sales of electricity to Agriculture in the country in 2018-19

Challenges

- Financial performance of DISCOM is still weak and need to be improved for better service delivery
- Declining Plant Load Factor (PLF) over time has become a concern for power generating companies due to its financial burden
- There is still scope for increasing share of Renewable Energy in the state as it still has a vast untapped potential
- Efficiency and conservation in industry, agriculture, and transport sectors need a special attention

The adverse effects of pandemic on affordability and accessibility of clean energy sources need to be mitigated

7.1 The Context

Energy Drive Economic Development

Modern energy is now an integral part of the human lives and it plays an important role in peoples' socio-economic wellbeing and prosperity. Energy services are an essential pre-requisite for the economic development. Historically, the modern energy services have enhanced the productivity of various sectors like industry, agriculture, infrastructure, transport and communication, health, and education in developed countries. Which is why, the modern energy services have played a crucial role in improving quality of life and wellbeing of people in developed countries. Moreover, access to modern energy is also viewed as an instrument for reducing pre-existing inequalities by improving the productivity of individuals, expanding their opportunities, and

thereby enhancing their income. As a result, the modern energy system has proven to be a key element in improving the quality of life.

However, benefits of modern energy system have not percolated to all individuals mainly due to uneven accesses to energy forms. Due to lack of access to modern energy to all, many countries have been facing impediments in achieving social progress, economic prosperity, and higher standards of living. It is also widely accepted that the adverse impact of lack of access to the modern energy services tends to fall disproportionately on the poorer sections of the society. If not addressed in time, it has potential to further aggravate and deepen the poverty by restricting opportunities (e.g. adverse implication of education in terms of reduced study hours), adverse implications on health (e.g. exposed to cooking fuel smoke), and reduced time for productive activities (e.g. time spent on collection of firewood). Therefore, ensuring access to affordable and clean energy for all has acquired a major space in public policy discourse in many countries.

Furthermore, the provision of affordable and reliable energy services to all implies that the dependence of non-renewable energy sources should be replaced with renewable energy sources to ensure sustainability. The heavy reliance on fossil-based energy forms tend to threaten long-term universality in access due to issues pertaining to affordability and scarcity. Therefore, efforts have been directed to ensure fossil-free energy usage. The use of renewable energy sources, additionally, serves the purpose of reducing emission level in the atmosphere.

Further, at the beginning of the present century, the international community had made a commitment on reducing poverty, hunger, illiteracy, environmental degradation, diseases, child mortality, maternal mortality, and gender-based discrimination in a time bound manner. For the said purpose, eight goals were developed which

would directly or indirectly help in achieving the above-mentioned objectives. While monitoring the progress of the countries on achievement of the goals, it was recognized that energy services were key in achieving all the MDGs, especially for the countries that were lagging behind. The chances of achieving MDGs tend to increase if there is universal access to affordable and sustainable energy services⁶⁵. However, there was no specific goal on energy developed in the MDGs. Therefore, it was expected that the countries would develop and adopt their own goal on energy and formulate strategy to ensure universal access to clean and affordable modern energy services.

However, the subsequent commitment of international community under the Sustainable Development Goals (SDGs) initiatives had explicitly incorporated energy related goal and indicators. Under the Sustainable Development Goal 7 on energy, targets have been set for ensuring universal access to energy services, increasing the share of renewable energy sources in the energy mix, and improving energy efficiency in a time bound manner. These targets are intended to result in ensuring modern and sustainable energy services for all.

7.2 SDG-7: Global Targets

The global targets to be achieved by 2030 are as follows:

- 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
- 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
- 7.3 By 2030, double the global rate of improvement in energy efficiency
- 7a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced cleaner fossil-fuel technology, and promote investment

65 UN Millennium Project (2005), "Energy Services for the Millennium Development Goals".

in energy infrastructure and clean energy technology

- 7b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support.

Status of Access to Modern Energy Services at Global and National Level

In spite of recognizing importance of universal access to modern energy services, 75.9 crore people in the world still do not have access to electricity in 2019, 260 crore people use wood, charcoal, animal and crop waste or other solid fuels for cooking in 2019, and share of renewable energy in total energy consumption was 17.1 per cent in 2018⁶⁶. The considerable number people outside the modern energy net at global level make the case for inclusion of energy in Sustainable Development Goals.

In India, according to Sustainable Development Goals National Indicator Framework Progress Report 2021 (Version 3.1), 99.77 per cent of households in the country have access to electricity in 2019-20 and 100 per cent of households are using clean cooking fuel in 2020-21. The share of renewable energy in total installed electricity generation in the country has increased from 13.4 per cent in 2015-16 to 19.2 per cent in 2018-19 and installed generating capacity increased from 63.68 watts per capita in 2015 to 93.30 watts per capita in 2019.

As per the Sustainable Development Report (2021), India falls under “Significant Challenges

Remain” category as far as the level of Goal 7 is concerned and “Moderately Increasing” category for trend of improvement on the Goal 7.

The Sustainable Development Report (2021) also alerted the countries about the possible negative impact of the COVID-19 pandemic on the progress of various Goals including Goal 7 on Affordable and Universal Energy for all. Due to the pandemic, the already existing financial gap in achieving SDGs has been further widened. This is mainly due to downturn in economic activities which has resulted in delays in implementation of SDG investment and deterioration in the achievement of SDGs during the pandemic. Therefore, countries that have shown progress in achievement of the SDG goals in recent years may find it difficult in achieving the goals.

As per the SDG 7 Tracking Progress Report (2021), three crores people in Africa are likely to face unaffordable electricity services and lose access that they had previously.

The SDG 7 Tracking Progress Report (2021) further emphasises that the incomes of many people have lowered due to pandemic induced economic crisis. As a result of falling income, these vulnerable households may face trade-off between meeting energy need with other needs and therefore tend to return to the traditional energy sources. The lowered income of the households may force them to decrease their electricity consumption and shift from the expensive clean cooking energy sources to the traditional unclean sources.

The following indicators have been selected at national level to assess the progress made to achieve the goal of universal access to affordable and clean energy.

66 International Renewable Energy Agency (2021), “Tracking SDG 7: The Energy Progress Report 2021”.

Table 7.1 Target Dimensions

National indicators	Value of the indicator		Target for 2030
Target 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services			
7.1.1 Percentage of households electrified	99.97		100
7.1.2 Percentage of households using Clean Cooking Fuel	Year	Value	100
	2015-16	62.83	
	2016-17	74.16	
	2017-18	82.49	
	2018-19	97.95	
	2019-20	102.11	
	2020-21	100.87	
Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix			
7.2.1 Renewable share of installed generating capacity (%)	Year	Value	40
	2015-16	13.4	
	2016-17	15.5	
	2017-18	17.7	
	2018-19	19.2	
Target 7.3: By 2030, double the global rate of improvement in energy efficiency			
7.3.1: Energy intensity measured in terms of primary energy and GDP, (in mega joules per rupee)	Year	Value	
	2015-16	0.2072	
	2016-17	0.1910	
	2017-18	0.1814	
	2018-19	0.1719	
Target 7.b: By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support			
7.b.1: Installed renewable energy generating capacity in the country (in watts per capita) (Similar to 12.a.1)	Year	Value	
	2015	63.68	
	2016	69.51	
	2017	78.73	
	2018	87.60	
	2019	93.30	

Source: SDG India Index Baseline Report 2018, NITI Aayog and Sustainable Development Goals National Indicator Framework Progress Report 2021 (Version 3.1), National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India.

Targets Set by Government of Telangana for Goal 7 and Performance of Telangana

In line with national indicators, the Government

of Telangana has developed the following targets for achieving Goal 7.

Table 7.2 Goal 7 Indicators in Telangana

Indicators	Base Value 2020	Target for 2030
Percentage of households electrified	100	Achieved
Percentage of households using Clean Cooking Fuel	84.21	100
Increase in share of Renewable Energy	4,159 MW	7,437 MW

As per the SDG India Index Baseline Report 2018 prepared by NITI Aayog, Telangana comes under “*Performer*” (score 50-64) category with score of 63 in achieving Goal 7 on energy. The score of Telangana is above national average of 51. However, as compared to other south Indian states, Telangana has scored lower than Andhra Pradesh (76), Karnataka (77), and Tamil Nadu (89), except for Kerala (60). These three states fall under *Front Runner* category. The lower share

of renewable energy in total installed generating capacity reported by Telangana (16.58 per cent) has resulted in comparatively lower score. However, considering the improvements in provision of clean cooking fuel to households (84.21 per cent of households use clean cooking fuel in 2019-20) and increase in share of renewable energy (25 per cent in Jan. 2020) in recent years, the position of the Telangana is likely to improve.

Table 7.3 Performance of Telangana on Indicators for SDG7

State / UT	Percentage of households electrified	Percentage of households using Clean Cooking Fuel	Renewable share of installed generating capacity (%)	Percentage of households electrified	Percentage of households using Clean Cooking Fuel	Renewable share of installed generating capacity (%)	SDG 7 Index score
Telangana	96.91	66.8	16.58	87	60	41	63

Source: SDG India Index Baseline Report 2018, NITI Aayog

Vision of the Government of Telangana

To ensure “Power for All”, the following vision has been launched by the Government of Telangana.

Vision

“To ensure 24x7 quality, reliable, and affordable power supply to all Households, Commercial Businesses, Public need, Industry and adequate power to Agriculture Farm Holdings”

In addition, Telangana State Renewable Energy Development Corporation Ltd., (TSREDCO), the State Nodal Agency (SNA) in the matters of renewable energy, has developed the following vision

“To be a pioneer institute in the area of promotion of Energy Conservation Initiatives and Renewable Energy programmes/ Projects with state-of-art technologies coupled with experts and technocrats to present highly competitive and efficient Services to the End User”

The strategies adopted to fulfill the visions are highly aligned with SDG targets on energy i.e. ensuring universal access to electricity, universal access to clean cooking fuel, increasing the share renewable energy, and energy efficiency and conservation. The future action plans of DISCOM also integrate

SDG related goals. These action plans include prepaid smart meters (which provides real time consumption of power by customers), Application of Distribution Management System (to reduce duration of interruptions and ensure reliability of power supply), sub-station capacity addition (to meet expected load growth), and significant increase in solar power production (for speeding restructuring of energy mix towards renewable energy).

Thus, the vision of Government of Telangana is in line with the SDG on energy and it would help in achieving universal access to affordable, reliable, and sustainable energy.

Interventions and Achievements

Universal Access to Electricity

Power Situation of the State at the Time of Formation

At the time of formation of the state, the situation of power sector was not encouraging. The total demand of power was 54,312.16 MU and the supply from the existing sources was at 49,895.91 MU resulting in shortage of -4,416.23 MU for the year (shortage of -8.1 per cent) (Transmission Corporation of Telangana Limited (Load Monitoring Cell)). Apart from power shortage, the state was also facing issues such as imposition of load-shedding of 4-8 hours on the domestic and other consumers and power holiday of 2-day a week on the industries (Socio-Economic Outlook, 2021, Government of Telangana).

The per capita power consumption of the state in 2014-15 was at 1,355.79 kWh which was higher than the national average of 1,009.61 kWh (Central Electricity Authority). The per capita power consumption was expected to further increase in coming years owing to assured 7 hours of power supply to agriculture customers, 24x7 supply to all other customers, urban development in Hyderabad city and planned urbanisation in Nizamabad, Karimnagar, and Warangal, forthcoming major projects such as Hyderabad

Metro Rail, Hyderabad Information Technology Investment Region (ITIR) and Hyderabad-Nagpur industrial corridor, and lift irrigation schemes and water grid projects.

In the year 2014-15, total power generated was at 40,902 GWH out of which about 50 per cent was produced by GENCO and remaining half was generated by Central Thermal plants. The total installed capacity of power utilities in the state, including allocated shares in joint and central sector utilities, was at 9,802.26 MW. The coal-based power utilities dominated the total installed capacity of the state (58.39 per cent) followed by Hydro (21.25 per cent), and Gas (17.93 per cent). The share of other Renewable Energy Sources (RES) was only 0.65 per cent of total installed capacity (Central Electricity Authority).

In the year 2014-15, the number of customers of electricity in the State was 1.12 crores. The domestic customers dominated with 73 per cent share followed by Agriculture (17 per cent), Commercial (8 per cent), and Industry (1 per cent) (Socio-Economic Outlook, Telangana, 2015). Out of total sale of electricity to different customers, Agriculture reported the highest share of 31.71 per cent followed by Industry (High Voltage) (26.63 per cent), Domestic (21.75 per cent), and Commercial (10.91 per cent).

Interventions

The Government of India has formulated the National Energy Policy (2019) which emphasizes the need to ensure universal access to electricity at affordable prices with 24x7 electricity by 2022 and clean cooking fuel, improved energy security by reducing reliance on imported fuel by 10 per cent from 2014-15 levels by 2022, reduction of emissions intensity by 33 per cent to 35 per cent by 2030 over 2005, achieving a 175 GW renewable energy capacity by 2022, and share of non-fossil fuel based capacity in the electricity mix is aimed at above 40 per cent by 2030. These aspects are intended to meet both universal accesses to clean energy and economic growth.

In addition, the Government of India has launched various specific schemes that fulfill the specific objectives of SDG 7. To fulfill the objective of universal access to affordable and modern energy to all, the Government of India has launched Pradhan Mantri Sahaj Bijli Har Ghar Yojana- Saubhagya (Prime Minister's Programme for Easy Electricity for Each Household) in September 2017 to provide electricity connection to all, rural and urban, households. The Deen Dayal Upadhyaya Gram Jyoti Yojana Scheme launched in November 2014 focuses on ensuring continuous power supply to the rural households and to the agriculture sector. The Integrated Power Development Scheme was launched in December 2014 to strengthen the sub-transmission, distribution network, and metering in urban areas.

Interventions of the Government of Telangana in the Power Sector

Organization Setup of Energy Sector in Telangana State

The Telangana State Electricity Regulatory Commission (TSERC) was constituted in November 2014 as per the Electricity Act, 2003. The major objective of the TSERC is to improve the functionalities in power sector in the state by determining tariff for generation, supply, transmission, and wheeling of electricity. It also regulates electricity purchases, facilitates intra-state transmission, and promotion of renewable energy.

The generation, transmission, and distribution of power are under taken by the different entities. Both the public sector utilities and private sector utilities are involved in generation of power in the State. Telangana State Power Generation Corporation Limited (TSGENCO) and Singareni Collieries Company Ltd are state owned power generation companies. The major contributors to the generation of in the state include TSGENCO, Singareni Collieries Company, Central Generating Stations, Inter-State Hydel Projects, and Private Sector.

The TSGENCO is the largest contributor of electricity in the state (36.59 per cent of total contracted capacity by January 2021). The TSGENCO generates power based on thermal, hydro, and solar sources. During 2020-21, TSGENCO has produced 20735.8 MU of Thermal, 3666.9 MU of Hydro, and 1.3 MU of solar power. The TSGENCO has consistently reported higher capacity utilisation of thermal power plants (Plant Load Factor) as compared to national average. In the year 2019-20, the PLF of TSGENCO was at 71.0 per cent which was higher than the national average of 56.1 per cent (Telangana State Power Generation Corporation Limited).

Other major contributors to electricity generation in the State include Singareni (7.38 per cent of total contracted capacity by January 2021), Chattisgarh Power (6.15 per cent), and Gas based power plants (4.97 per cent). The private sector constitutes 23.03 per cent of total contracted capacity in the state. The major contributor in the private sector is solar based power which accounts for 21.21 per cent of the total contracted capacity in the state (Transmission Corporation of Telangana Limited).

The Transmission Corporation of Telangana Limited (TSTRANSCO) came into existence in June 2014. The TSTRANSCO has entrusted with planning, constructing, and maintaining power transmission network in the state. The TSTRANSCO has reduced transmission losses to 2.5 per cent (up to October 2020), which is the lowest in the country, and transmission availability of 99.99 per cent, which is the highest in the country (Socio-Economic Outlook, Telangana, 2021).

There are two Public Limited Companies, namely, Southern Power Distribution Company of Telangana Limited., (TSSPDCL) (serving 16 districts) and Northern Power Distribution Company of Telangana Limited., (TSNPDCL) (serving 17 districts), entrusted with managing distribution of electricity in the state. Apart from the state-owned companies, Cooperative Electric

Supply Society Ltd, Sircilla is also involved in distribution of electricity in the state.

The Government of Telangana has also created Telangana State Renewable Energy Development Corporation Ltd. (TSREDCO) in September 2015 to look after matters related to renewable energy and energy conservation in the state.

Power Sector Interventions by the State

As far as the State Government interventions are concerned, soon after the formation of the state, the Government of Telangana had planned to add 20,000 MW of power generation in five years. In the year 2014-15, the government had signed a Memorandum of Understanding with the Chhattisgarh government for the purchase of 1,000 MW of power. During the same period, the National Thermal Power Corporation planned to set up 4,000 MW power generating plant at Ramagundam. The government had also signed MoU with Bharat Heavy Electricals Limited for setting up of thermal power plants with a generating capacity of 6,000 MW. The government had also authorised TSGENCO to purchase power. In order to increase the share of non-conventional energy in total energy mix, the government had initiated bid process for about 500 MW of solar power. Other major initiatives in the area of non-convention energy include setting up of single window clearance mechanism, allowing unrestricted banking during ToD hours, providing cross subsidy surcharge exemption, providing policy support for solar roof tops and net metering, and promotion of Decentralised Distributed generation model for solar power generation.

New power projects were taken up during 2015-16 which would add capacity of 6,160 MW (Lower Jurala, Pulichintala, Bhadadri Thermal Power Station, Kothagudem Thermal Power Station and

Yadadri Thermal Power Station). The Solar Power Policy, 2015 was announced to harness the solar power potential in the state. The government targeted 5,000 MW of solar power by 2017-18 by establishing solar parks with infrastructure facilities for developers.

During 2016-17, new projects were commissioned under Kakatiya Thermal Power Station Stage II (1x600 MW), Lower Jurala Hydel Project (6x40 MW), Pulichintala Hydel Project (1x30 MW), and Singareni Thermal Power Project (2x600 MW). New projects under Bhadradri Thermal Power Plant, Manuguru (4x270 MW), Yadadri Thermal Power Plant (5x800 MW) and Kothagudem Thermal Power Station (1x800 MW), and Pulichintala Hydel Power Project (3x30 MW) were also under progress. In case of solar power, 977.23 MW of solar projects have been commissioned in the state.

Singareni Thermal Power Project (STPP) was set up with 2x600 MW capacity power project at Jaipur mandal, Mancherial district and the power generation started from June 2016. The line from Warda to Dichpalli was completed which would enable the state to procure power from any part of the country.

As a result of implementation of Telangana State Solar Policy, 2015, the solar capacity increased from 74 MW at the time of formation to 3090 MW by the end of 2018. As a result, Telangana became frontrunner in production of solar energy in the country. Telangana has implemented 'distributed generation model' for adding solar capacity. The advantages of this model are: (i) avoidance of investment of Rs 533 crore at EHT level in the transmission network, and (ii) saving of energy of 122 MU, amounting to an annual saving of Rs 49 crore, as generation is closer to the demand.

Table 7.4 Source-wise Contracted Capacity as on 31.03.2020 (in MW)

Source	Contracted Capacity
Genco - Thermal	2962.5
Genco - Hydel	2430.6
Genco - Mini Hydel	11.16
Genco - Solar	1
Singareni TPP	1200
Chattisgarh Power	1000
Inter-State Hydel Projects (TS Share)	76.31
Joint Sector - GAS (TS Share)	24.51
Ramagundam STPS (1-7 Units)-CGS	432.2
M.A.P.P. -CGS	22.76
Neyveli Lignite Corporation-CGS	166.93
Kaiga Nuclear Power Plant I-IV -CGS	145.06
Simhadri TPS -CGS	538.9
Simhadri Expansion-CGS	231.3
Talcher Ph-II Units 3,4,5,6 - CGS	214.43
Vallur Stage-I&II - CGS	110.6
NTPL Unit-I&II - CGS	152.27
Kudankulam Nuclear Power Plant-CGS	50
Kudgi- I,II &II - CGS	271.68
Eastern & Western Region - CGS	200
NNTPP - CGS	31.07
Private Sector - Solar	3673
Private Sector - Mini Hydel	13.66
Private sector- Industrial Waste	18.5
Private sector-Bagasse	74.2
Private sector-Bio-mass	57
Private sector-Municipal Waste	6.6
Private Sector - Wind	100.8
IPP - Gas based Power Plants	807.31
Semcorb- (Long term IPP)- I	269.45
Semcorb- (Long term IPP)- II	570
Total	15863.8

Source: Transmission Corporation of Telangana Limited

During 2017-18, the government started Telangana State Rural High Voltage Distribution System Project (HVDS). The project was intended to reduce losses through replacement of low-voltage networks with high-voltage networks and installation of a large number of smaller-capacity distribution transformers in place of higher capacity for supply to agriculture consumers.

In case of transmission network, the transmission system of (Telangana State) TSTransco as of March 31, 2019 consists of 4632 Circuit KMs of 400 kV lines and 7677 Circuit KMs of 220 kV lines and 11162 Circuit KMs of 132 kV lines. There are 17 Nos. 400 kV sub-stations, 81 Nos. 220 kV sub-stations and 234 Nos. 132 kV sub-stations. In addition to the above, new lines of 3198 CKM of 400 kV lines, 1706 CKM of 220 kV lines, 1757 CKM of 132 kV lines and new Sub-Stations of 4 Nos. 400 kV Sub-Stations, 17 Nos. 220 kV Sub-Station and 43 Nos. 132 kV Sub-Stations expected to be added during 2019-24. These measures are intended to further improve the overall transmission efficiency (Transmission Corporation of Telangana Limited).

The transmission losses of TSTransco have declined over the period of time, from 3.18 per cent in 2014-15 to 2.57 per cent in 2020-21. The loss reduction measures such as system improvement, reactive power compensation, etc. has helped in achieving this objective.

Table 7.5 Year-wise Transmission Losses

Year	Transmission Losses
2014-15	3.18
2015-16	3.13
2016-17	3.37
2017-18	3.25
2018-19	2.85
2019-20	2.65
2020-21	2.57

Source: Transmission Corporation of Telangana Limited

The T&D losses of Telangana have been consistently lower than the national average for the period 2014-15 to 2018-19. In the year 2018-19, T&D losses of Telangana were at 14.85 per cent which was lower than the national average of 20.66 per cent. In the year 2018-19, Telangana stood 4th in the country in terms of lower T&D losses after Delhi (12.56 per cent), Himachal Pradesh (14.29 per cent), and Punjab (14.73 per cent).

To protect the interest of the electricity consumers, there are four Consumer Grievance Redressal Forums (CGRF) functioning in the state, two under Telangana State Southern Power Distribution Company Limited (TSSPDCL) and two under Telangana State Northern Power Distribution Company Limited (TSNPDCL). Various grievances are addressed under these forums such as grievances related to billing, power interruptions, metering, etc. Issues would be resolved within maximum of 45 days from the date of receipt of complain. During 2019-20,

the customer grievance response as percentage of standard complaints was 89.73 per cent for TSNPDCL and 93.78 per cent for TSSPDCL.

Further, the smart meters perform the basic function of metering along with other functions such as collection and dissemination of curial consumption data to utilities, inform consumers about the real time pricing and usage of electricity, and enables utilities to remotely load connect or disconnect. Under the Smart Grid pilot project sanctioned by Ministry of Power, Government of India, Jeedimetla Industrial Area in the state has been selected for installation of smart meters. Under the project, 11,904 consumers covered for installation of smart meters. As on February, 2021, 8,800 meters have been commissioned in Jeedimetla Smart Grid Project. The TSDISCOMs have also installed prepaid meters for government buildings. So far TSSPDCL 13,759 services and in TSNPDCL 11,582 services have been installed with prepaid meters.

Table 7.6 State-wise T&D Losses in the Country (*in per cent*)

State	2014-15	2015-16	2016-17	2017-18	2018-19
A.& N. Islands	20.5	14.4	10.7	12.39	10.84
Andhra Pradesh	17.9	16.2	16.2	16.07	17.62
Arunachal Pradesh	46.2	50.6	49.4	48.32	50.83
Assam	27.6	25.2	25	24.6	23.98
Bihar	46.3	42.8	30.3	30.29	32.51
Chandigarh	19.1	18.7	18	13.45	17.09
Chhattisgarh	29.2	30.8	25.6	23.97	25.14
D & N Haveli	10.3	10.1	10.8	13.97	10.66
Daman & Diu	29.6	31.8	32.8	12.74	12.41
Delhi	21.5	19.6	19.4	17.38	12.56
Goa	15	18	18	17.21	16.23
Gujarat	19.3	19.1	18.2	17.9	20.3
Haryana	34	31.6	33.7	28.24	22.78
Himachal Pradesh	20.8	18.8	22.4	21.78	14.29
Jammu & Kashmir	53.1	50.1	47	45.47	42.19
Jharkhand	17.2	17	16.3	16.27	18.37
Karnataka	11.5	10.5	13.4	13.25	16.01
Kerala	15.4	11.6	18.1	15.76	16.39
Lakshadweep	3.6	9.8	7	3.56	2.24

State	2014-15	2015-16	2016-17	2017-18	2018-19
Madhya Pradesh	32.3	28.6	26.8	26.75	27.65
Maharashtra	20.4	19.9	18.2	17.85	19.46
Manipur	40.9	44.5	36.5	36.41	35.61
Meghalaya	33.1	32.3	35.7	35.08	43.12
Mizoram	42.1	36.1	35.5	24.23	25.21
Nagaland	26.5	29.9	20.8	19.67	20.67
Odisha	42	39.1	38.2	38.11	34.94
Puducherry	14.9	14	15.6	17.93	13.26
Punjab	18.5	18.5	17.6	17.52	14.73
Rajasthan	27.5	29.1	29.7	28.66	24.8
Sikkim	25	26.5	23.8	35.54	32.72
Tamil Nadu	11.1	10.8	12.6	15.94	19.12
Telangana	15.7	16.5	18.7	18.26	14.85
Tripura	35.9	30.6	30.4	29.89	26.7
Uttar Pradesh	27.2	24.5	23.6	23.19	21.21
Uttarakhand	24.5	25.6	25.4	25	22.23
West Bengal	24.7	22.2	22.4	22.2	18.33
All India	22.8	21.8	21.4	21.04	20.66

Source: Central Electricity Authority, Ministry of Power, Government of India

Within 2 to 3 years, all the existing meters in the state are proposed to be replaced by smart prepaid meters.

Present Status of the State in the Power Sector

The State has made remarkable improvement in power sector since its formation. The demand for power has increased from 54,312.16 MU in 2014-15 to 65,692.01 MU in 2019-20. Since 2016-17, there was no power deficit in the state

(Transmission Corporation of Telangana Limited (Load Monitoring Cell)). Similarly, at the time of formation, there was a peak power demand shortage of 2,700 MW. The situation has changed drastically with the state grid met a peak demand 10,818 MW on 11.09.2018 and record consumption of 233 MU on 09.10.2018 and utilities are fully geared up to meet load up to 17000 MW in near future (Socio-Economic Outlook, 2019)

Table 7.7 Demand and Supply Position of Power in the State (in MU)

Year	Energy Required (MU)	Energy Met (MU)	Energy +/- (MU)
2014-15	54312.16	54312.16	-4416.23
2015-16	49275.8	49275.8	-271.411
2016-17	53210.47	53210.47	0
2017-18	60377.05	60377.05	0
2018-19	17123.89	17123.89	0
2019-20	65692.01	65692.01	0
2020-21	67152.71	67152.71	2

Source: Transmission Corporation of Telangana Limited (Load Monitoring Cell)

The per capita power consumption of the state has improved from 1,355.79 kWh in 2014-15 to 2,070.951 kWh in 2019-20. The per capital power consumption of the state was higher than the national average of 1,207.891 kWh. During 2019-20, Telangana was among the top five high per capita power consumptions states in the country (Goa: 2,396.039 kWh, Gujarat: 2,387.936 kWh, Haryana: 2,229.227 kWh, and Punjab: 2,171.192 kWh) (Central Electricity Authority, Ministry of Power, Government of India).

The power generation of the state has increased from 40,902 GWH in 2014-15 to 51,854.82 GWH in 2019-20. The GENCO remained the highest contributor of energy generation in the state (49.18 per cent). However, the contribution of Central Thermal Plants has reduced from 49.98 per cent in 2014-15 to 33.03 per cent in 2019-20. The Singareni TPP has contributed 17.79 per cent of total power generation in the state.

Figure 7.1 Source-wise Proportion of Power Generation in Telangana (in per cent)

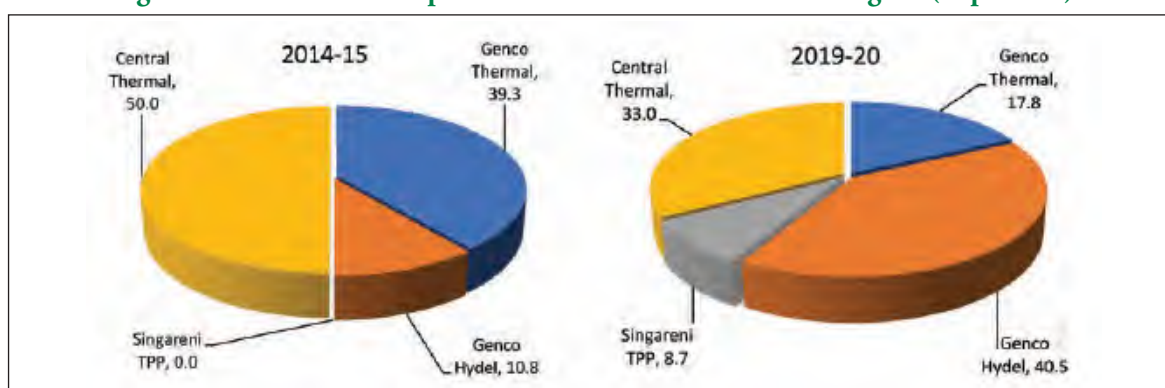


Table 7.8 State-wise Per Capita Power Consumption (in kWh)

State	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
A. & N. Islands	360.50	354.59	369.58	569.28	596.67	585.45
Andhra Pradesh	1039.71	1229.51	1318.80	1388.24	1479.58	1506.55
Arunachal Pradesh	525.23	600.44	648.21	656.21	703.24	631.38
Assam	313.99	322.24	338.64	330.48	341.39	348.03
Bihar	202.94	257.70	271.95	280.02	311.31	332.12
Chandigarh	1052.00	1112.38	1127.77	1004.31	978.06	985.67
Chhattisgarh	1719.00	2022.37	2016.44	2003.03	1960.66	2044.00
D. & N. Haveli	13768.98	15137.35	15782.73	15218.05	15178.68	15517.23
Daman & Diu	6960.33	7835.98	7964.84	7902.14	7758.05	7560.97
Delhi	1560.64	1556.58	1573.99	1563.54	1548.48	1571.58
Goa	1803.24	2737.72	2466.49	2228.94	2274.44	2396.04
Gujarat	2104.64	2247.68	2278.98	2320.79	2377.69	2387.94
Haryana	1909.26	1936.17	1974.60	1990.18	2081.68	2229.23
Himachal Pradesh	1336.19	1338.86	1339.63	1392.82	1417.93	1527.20
Jammu & Kashmir	1168.66	1234.26	1281.73	1283.58	1322.29	1383.64
Jharkhand	834.81	884.05	915.15	926.94	938.47	853.49
Karnataka	1211.46	1242.31	1367.10	1355.77	1395.70	1468.06
Kerala	671.72	704.22	762.97	765.86	757.10	825.65

State	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Lakshadweep	657.11	648.90	633.07	562.89	553.57	550.95
Madhya Pradesh	812.80	928.95	988.88	1019.99	1084.00	1085.96
Maharashtra	1257.09	1317.66	1307.30	1370.99	1424.27	1417.73
Manipur	295.26	359.94	325.53	346.78	371.07	385.01
Meghalaya	704.42	834.87	832.41	743.00	880.55	861.09
Mizoram	449.38	503.47	522.68	489.77	617.44	628.78
Nagaland	311.32	346.06	344.93	348.24	356.17	367.04
Odisha	1418.99	1563.57	1622.23	1592.70	1627.72	1559.34
Puducherry	1654.90	1671.92	1783.75	1749.29	1744.50	1751.92
Punjab	1857.88	1919.13	2027.51	2048.95	2046.01	2171.19
Rajasthan	1122.82	1163.52	1165.94	1178.03	1282.46	1316.64
Sikkim	684.93	686.60	806.23	810.38	872.73	928.89
Tamil Nadu	1615.66	1687.93	1847.37	1834.01	1866.34	1843.93
Telangana	1355.79	1439.41	1551.43	1727.40	1896.28	2070.95
Tripura	303.14	328.96	470.24	714.16	513.53	425.39
Uttar Pradesh	501.60	524.43	584.87	627.58	605.74	628.73
Uttarakhand	1357.83	1431.22	1453.68	1450.12	1466.85	1527.90
West Bengal	647.34	660.47	664.74	698.98	703.26	756.65
All India	1009.61	1074.65	1121.73	1149.10	1180.86	1207.90

Source: Central Electricity Authority, Ministry of Power, Government of India

During 2014-15, Telangana was at 12th position in the country in terms of power generation. Since 2017-18, its position improved to 10th in the country (Central Electricity Authority, Ministry

of Power, Government of India). The share of Telangana in total power generated in the country was around 4 per cent for the period under consideration.

Table 7.9 State-wise Generation of Power (in GWH)

State	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
A & N Islands	153.76	182.85	215.56	258.79	120.73	96.19
Andhra Pradesh	45245.43	58230.59	65248.16	61851.8	63143.82	62943.12
Arunachal Pradesh	1109.48	1280.25	1249.01	1416.74	1399.02	1786.46
Assam	4299.84	4522.12	5981.37	5972.12	7224.98	8030.37
Bihar	25551.11	28029.93	24514.85	28440.03	32170.52	35360.76
Chhattisgarh	79710.57	89513.29	105686.2	110041.8	115714.3	118229
Delhi	8722.84	6206.1	6253.26	7048.7	7136.04	6015.11
Goa	0	0	0	0	0	0
Gujarat	105538.6	104917.3	99748.61	96519.87	96591.35	106949.3
Haryana	28748.61	22247.14	18890.44	26605.97	25435.43	17317.01
Himachal Pradesh	23319.14	27087.49	26853.98	28412.65	35908.55	40834.88
Jammu & Kashmir	14485.02	15136.15	15377.69	14937.56	16387.07	18094.12

State	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Jharkhand	14588.15	15882.43	14727.43	13997.33	26981.63	26223.04
Karnataka	50163.3	47553.25	43766.67	44668.81	49756.96	45128.91
Kerala	8034.17	6653.34	4130.61	5248.02	7325.09	5466.08
Madhya Pradesh	75212.48	95740.5	98599.98	111333	121677.7	121100
Maharashtra	107309.2	117244.4	118091.7	124308.8	137023.7	131418.2
Manipur	372.44	536.64	741.07	837.74	602.61	366.59
Meghalaya	863.14	1035.99	916.7	1401.03	929.53	1018.29
Mizoram	0	0	0	78.37	168.44	177.02
Nagaland	165.15	163.14	258.94	274.39	231.47	180.85
Odisha	51332.43	57221.8	55841.18	46512.83	46824.37	48253.97
Puducherry	102.14	227.59	246.84	226.45	229.88	255.79
Punjab	22960.9	23342.89	26492.18	28958.56	30699.66	26025.15
Rajasthan	54185.92	53947.35	51792.17	51643.61	56978.26	55942.38
Sikkim	3345.29	3551.92	4330.4	8887.99	9022.07	11027.36
Tamil Nadu	71418.43	76406.83	84581.68	82386.3	83778.51	83498.02
Telangana	40901.97	36868.2	43391.23	49913.97	49963.03	51854.82
Tripura	3824.44	5109.38	5873.89	5999.27	6630.85	6092.94
Uttar Pradesh	111901.7	111329.5	120142.1	128542.3	122772.4	124180.2
Uttarakhand	11439.21	12765.92	14250.54	15606.6	14995.36	16541.32
West Bengal	49742.02	46946.62	52192.69	52381.91	76952.06	74311.77

Source: Central Electricity Authority, Ministry of Power, Government of India

In case of installed capacity, the State has improved from 9,802.26 MW in 2014-15 to 16,016.5 MW in 2019-20. The installed capacity grew at the rate of 11.63 per cent during the same period (CAGR). The installed capacity under private sector grew at a much higher rate at 24.61 per cent (from 2,693.25 MW in 2014-15 to 5,607.71 MW in 2019-20). As compared to 2014-15, the share of Gas based power utilities and Hydro has reduced in 2019-20 (from

17.32 per cent to 5.19 per cent and from 20.53 per cent to 15.48 per cent respectively). There was drastic improvement in the share of Renewable Energy Sources (RES) from 8.41 per cent in 2014-15 to 25.07 per cent in 2019-20. As compared to other states, the position of Telangana in terms of installed capacity has increased from 11th in 2014-15 to 9th in 2019-20 (Central Electricity Authority, Ministry of Power, Government of India).

Figure 7.2 Source-wise Proportion of Installed Capacity in Telangana (in per cent)

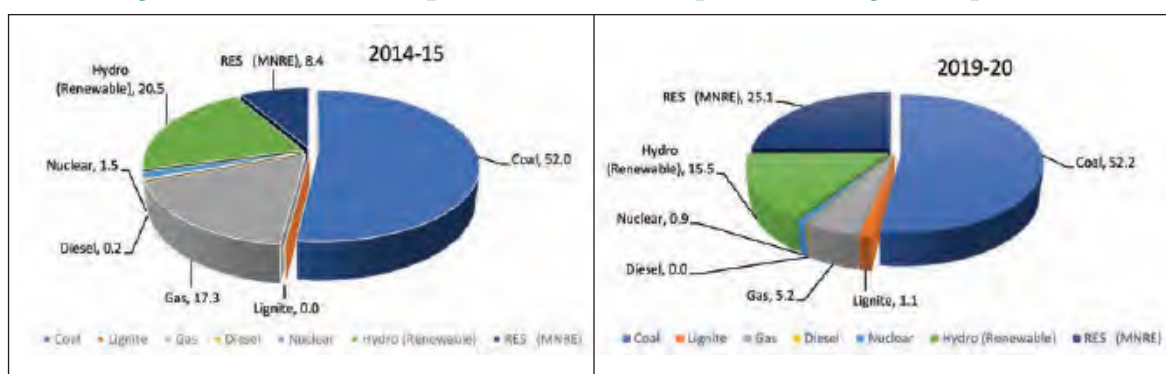
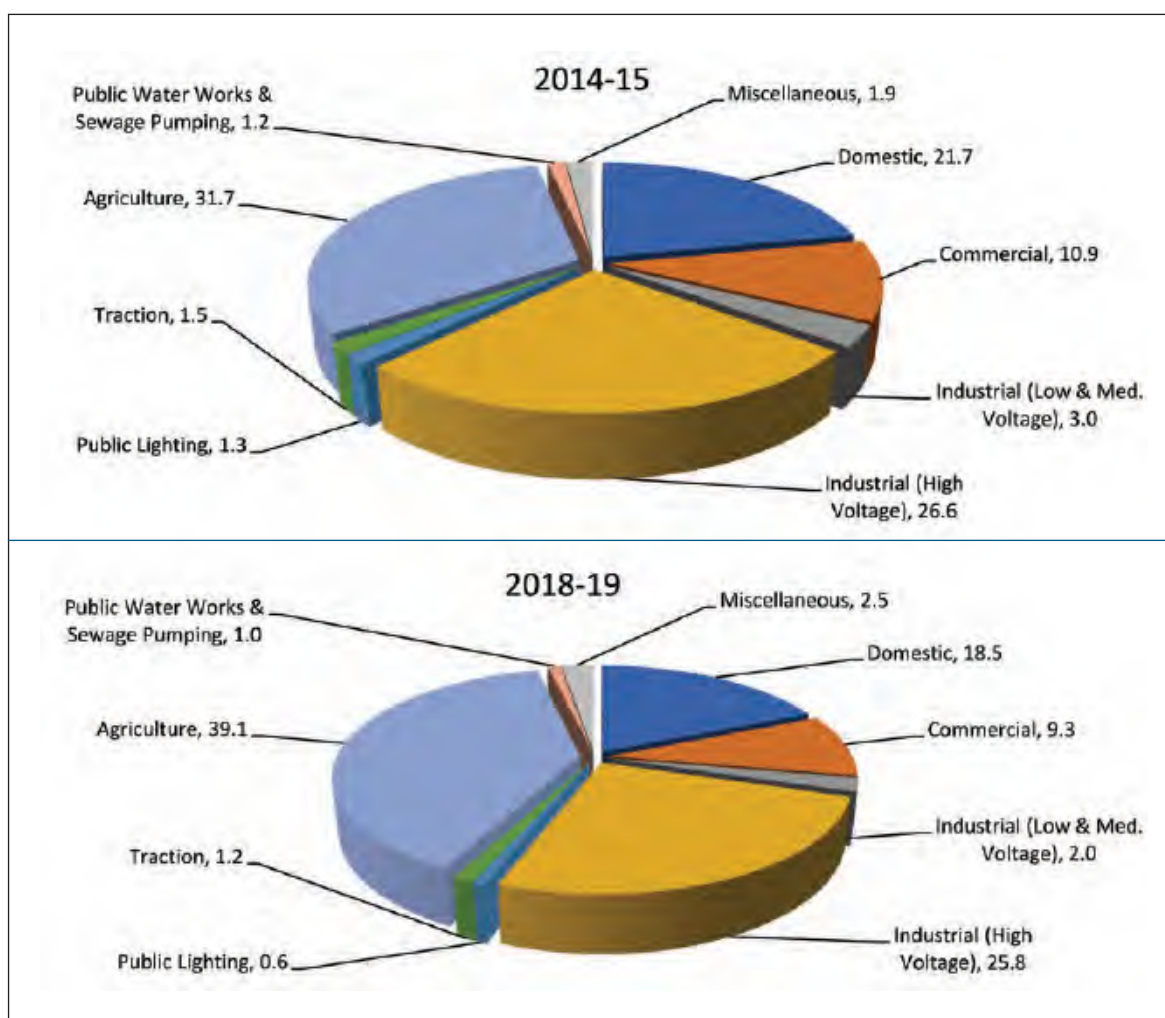


Figure 7.3 Customer Category-wise Proportion of Electricity Sales in Telangana (in per cent)

The number of electricity consumers has increased from 1.2 crore in 2014-15 to 1.5 crore in 2018-19. The domestic consumers continued to have the highest share in total customers (72.8 per cent) followed by Agriculture (15.8 per cent). In terms of sales, total sales during 2018-19 was 61,640.07 GWH. Agriculture constituted 39.06 per cent of total electricity sale which was higher as compared to its share in 2014-15 (31.71 per cent). The sale to Agriculture has almost doubled during the period from 12,569.14 GWH to 24,077.04 GWH. Telangana stood 2nd in terms of sales of electricity to Agriculture in the country after Maharashtra during 2018-19 (34,616.34 GWH) (Central Electricity Authority, Ministry of Power, Government of India).

As a result of above-mentioned improvement in the power sector, Telangana has become the only state that provides uninterrupted power supply to all sectors 24 hours a day. The government of Telangana has also achieved the goal of providing electricity to all households in the year 2019-20.

The government is aiming at making the state power surplus state in the coming few years. The existing Installed Capacity stands at 15,864 MW (2019-20). At present, power generation projects of 11,715 MW capacity are under various stages of execution and the total installed capacity of the state would be 28,000 MW in the coming 3 to 4 years. The major power project under execution are Yadadri Thermal Power Station (4,000 MW), Bhadradi Thermal Power Station (810 MW), and Ramagudam NTPC (1,600 MW).

The Government of Telangana has also formulated Telangana Electric Vehicle and Energy Storage Policy (2020-30) for reducing the consumption of fossil fuel and thereby reducing carbon emission emanating from the transport sector. The major objectives of the EVESP include shifting from expensive fossil-based transport sector to more sustainable, low cost, and domestically produced renewable energy-based transport sector. Under the policy, the state government is extending incentives to Manufacturing of Electric Vehicles, Energy Storage Systems & related components in Telangana. The incentives include Capital

Subsidies, SGST reimbursements, power tariff subsidies, etc. By April 2021, 2,290 electric vehicles which includes Two Wheelers, Three Wheelers, and Four Wheelers (National Automotive Board, Department of Heavy Industry, Ministry of Heavy Industry and Public Enterprises, Government of India, were sold in Telangana. The TSTransco is fully geared up to supply the required bulk power to the upcoming charging agencies as well as retail consumers. Telangana State Electricity Regulatory Commission (TSERC) has created a separate consumer category for these charging agencies.

Table 7.10 State-wise Installed Capacity including Allocated Shares in Joint & Central Sector Utilities (in MW)

State	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
A & N Islands	70.4	50.4	51.86	51.86	57.03	57.49	74.52
Andhra Pradesh	10466.11	14827.47	22298.3	23051.51	24184.29	24803	25483.92
Arunachal Pradesh	260.44	257.86	273.84	278.97	336.92	378.64	765.14
Assam	1263.14	1369.45	1599.65	1505.32	1710.38	1756.69	1794.1
Bihar	2759.79	2984.79	3607.54	4341.47	4566.47	5791.86	6320.8
Chandigarh	115.1	124.06	176.92	188.09	197.6	202.97	214.73
Chhattisgarh	13085.01	15540.14	2059.84	13426.79	14044.1	12821.4	13076.27
D & N Haveli	79.93	89.78	241.82	255.24	276.4	493.16	508.79
Daman & Diu	48.29	58.96	181.56	187.58	206.22	221.2	255.63
Delhi	8199.49	8346.72	7839	7884.84	7237.16	7581.85	7589.87
Goa	400.02	412.45	540.56	549.41	567.23	580.83	595.77
Gujarat	28673.36	29611.18	30716.47	30794.32	32290.72	35135.87	37893.41
Haryana	8668.49	8792.41	11056.16	11242.01	11267.99	12500.44	12480.87
Himachal Pradesh	4493.56	4424.29	3892.72	4038.68	4068.13	4007.17	4154.57
Jammu & Kashmir	2602.38	3122.2	3273.58	3428.32	3394.19	3417.13	3477.79
Jharkhand	2625.91	2625.91	2237.06	1764.46	1773.74	2514.21	2547.87
Karnataka	14624.72	17037.42	21316.59	26697.47	28075.21	29824.81	30090.8
Kerala	4096.21	4163.02	4998.94	5074.72	5083.37	5696.43	5836.95
Lakshadweep	10.72	0.75	0.71	0.75	0.75	0.75	0.75
Madhya Pradesh	15579.6	17643.96	19618.28	20321.87	23334.4	24821.05	25489.32
Maharashtra	37797.37	40376.21	41409.84	43074.19	44143.9	43496.29	44165.62
Manipur	199.82	206.11	233.38	233.41	258.9	267.62	261.82
Meghalaya	494.8	510.45	518.32	558.33	582.21	608.53	616.03

State	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Mizoram	160.93	119.42	136.92	192.02	206.42	211.94	207.45
Nagaland	131.34	140.04	154.87	155.37	170.03	174.53	179.03
Odisha	9035.1	9421.52	8538.27	7338.42	7653.58	8566.59	8594.47
Puducherry	329.88	334.63	366.98	367.06	370.04	374.51	380.43
Punjab	10255.72	12455.44	14162.15	14264.97	13432.44	14205.42	14388.69
Rajasthan	15416.59	17783.89	19776.32	21024.5	22588.74	25257.35	26044.92
Sikkim	323.48	414.48	758.14	962.14	962.15	674.43	677.83
Tamil Nadu	22563.64	24746.81	29112.27	29902.68	31059.15	32828.34	33695.02
Telangana	9802.26	10891.78	11501.28	15087.13	15826.21	16016.52	17217.84
Tripura	622.05	676.5	727.33	727.33	752.14	763.96	723.96
Uttar Pradesh	14842.37	18631.54	23662.41	25010.73	25130.02	26161.5	27895.7
Uttarakhand	2758.08	3177.28	13.45	3356.23	3402.9	3549.68	3731.34
West Bengal	9575.78	9983.84	382.78	10637.59	10568.22	11026.5	11036.88

Source: Central Electricity Authority, Ministry of Power, Government of India

Table 7.11 State-wise Sales of Electricity to Ultimate Consumers (in GWH)

State	2014-15	2015-16	2016-17	2017-18	2018-19
A & N Islands	229.46	242.27	265.83	265.6781	254.68
Andhra Pradesh	41913.67	44352.74	47761.45	51000.8	63341.69
Arunachal Pradesh	542.65	375.17	370.8177	436.9787	446.54
Assam	5484	6199	6525	7063.82	8657.6
Bihar	9807.3	13249.63	17250.69	18713.22	21197.8
Chandigarh	1471.66	1496.98	1589.016	1573.88	1535.64
Chhattisgarh	17101.55	18886.9	19159.47	20362.54	44749.45
D & N Haveli	5163.63	5548.24	5737	5672.04	6069.99
Daman & Diu	1594.96	1691.98	1737.09	2377.37	2431.93
Delhi	24775.02	25658.17	26604.49	28487.75	29170.99
Goa	3151.2	3391.2	3475.37	3617.92	4103.66
Gujarat	73889.76	77027.77	85555.79	90719.23	110161.3
Haryana	32197.33	35092.26	34500.61	38215.38	44077.31
Himachal Pradesh	7841.52	7957.79	7973.791	8404.559	9164.3
Jammu & Kashmir	6372	7143.92	7902.45	8394.87	9636.53
Jharkhand	16532.88	17541.57	19548.79	19950.15	26814.8
Karnataka	55165.52	57223.18	58152.32	59235.6	75300.49
Kerala	18785.92	19828.92	20218.4	21354.14	22282.88
Lakshadweep	44.63	45.6	47.59334	48.50232	48.91

State	2014-15	2015-16	2016-17	2017-18	2018-19
Madhya Pradesh	41757.01	46384.45	45681.37	52522.85	69234.17
Maharashtra	108496.1	115355.7	121050.8	124920.7	139487.9
Manipur	465.1	474.98	511.92	564	612.78
Meghalaya	1232.519	1283.18	972.3828	1063.725	1249.97
Mizoram	327.22	338.5	353.5411	395.767	407.76
Nagaland	529.34	549.47	634.83	663.72	679.14
Odisha	15439.85	16053.22	16987.96	17713.75	70204.68
Puducherry	2441.47	2468.14	2556.19	2539.963	2816.2
Punjab	39383.82	40843	44050.22	47027.46	52364.09
Rajasthan	49920.12	50358.78	51027.26	53617.78	67805.35
Sikkim	404.71	354.46	436.57	343.6719	380.81
Tamil Nadu	77617.76	80083.19	83936.07	86654	98257.02
Telangana	39638.88	41288.97	44446.48	51197.64	61640.07
Tripura	786.13	813.06	895.2717	928.0113	955.69
Uttar Pradesh	64706.68	70966.9	81068.21	90395.38	101735.2
Uttarakhand	9980.11	10298.14	11161.88	11210.3	12494.92
West Bengal	39058.55	42496.61	43945.8	45477.6	50199.36

Source: Central Electricity Authority, Ministry of Power, Government of India

Table 7.12 State-wise and Customer-wise Sales of Electricity (in GWH)

State / UTs	Domestic	Commer- cial	Industri- al (Low & Med. Voltage)	Industrial (High Voltage)	Public Lighting	Traction	Agricul- ture	Public Water Works & Sewage Pumping	Miscella- neous
Chandigarh	704.67	472.98	125.15	135.46	15.09	0	1.36	(B)	80.93
A & N Islands	133.86	60.29	20.99	0	6.72	0	1.02	0	31.79
Andhra Pradesh	14201.57	4724.61	5332.67	21097.83	553.73	1534.81	12838.59	579.52	2478.36
Arunachal Pradesh	185.72	51.02	4.38	116.5	10.12	0	0.03	0	78.78
Assam	3677.5	1096.95	112.23	2919.09	15.97	0	46.71	86.16	702.98
Bihar	11505.49	2067.82	553.88	2923.8	62.15	1248.97	726.71	104.77	2004.21
Chhattisgarh	5214.97	1482.14	539.86	31035.83	94.49	983.48	5038.43	360.25	0
D & N Haveli	122.16	34.2	216.07	5674.86	5.8	0	7.23	6.24	3.43
Daman & Diu	132.58	51.3	197.46	2022.78	8.24	0	4.83	3.67	11.07
Delhi	15430.54	7702.83	3051.59	392.46	366.45	499.59	33.43	386.33	1307.77
Goa	1152.05	541.73	131.38	2193.62	2.66	0	26.37	0	55.85
Gujarat	15537.75	4157.85	16224.4	54922.68	312.1	743.05	14598.35	2207.79	1457.34
Haryana	9623.26	4547.94	1831.47	15431.05	232.06	409.83	9714.29	1024.63	1262.79
Himachal Pradesh	2080.47	614.56	207.58	5250.51	10.37	0	62.98	565.73	372.1
Jammu & Kashmir	4013.45	1263.4	601.41	1259.77	59.32	23.17	349	701	1366

State / UTs	Domestic	Commercial	Industrial (Low & Med. Voltage)	Industrial (High Voltage)	Public Lighting	Traction	Agriculture	Public Water Works & Sewage Pumping	Miscellaneous
Jharkhand	5683.38	808.83	273.46	18482.87	110.33	757.83	210.36	0	487.75
Karnataka	12954.19	6553.68	2495.09	24613.79	1092.41	99.9	22788.19	3903.29	799.94
Kerala	10927.01	2455.89	1186.05	4206.05	381.21	321.07	348.67	0.16	2456.77
Lakshadweep	35.97	11.78	0.38	0	0.67	0	0	0	0.11
Madhya Pradesh	13385.4	3141.3	1281.21	22072.51	419.24	1951.48	20283.8	1572.68	5126.55
Maharashtra	28650.32	15274.24	9895.77	39729.45	1991.57	3070.35	34616.34	2851.11	3408.76
Manipur	376.78	66.14	20.86	9.04	9.89	0	2.12	21.18	106.77
Meghalaya	442.66	93.3	9.44	568.83	0.2	0	0.13	40.81	94.6
Mizoram	244.62	61.04	2.39	11.97	2.67	0	0	68.58	16.5
Nagaland	380.43	97.56	67.07	0	14.87	0	0	10.38	108.83
Odisha	7175.22	1833.48	384.3	57825.85	119.35	1203.34	558.89	154.54	949.71
Puducherry	723.63	212.85	159.59	1613.3	27.58	0	59.97	0	19.29
Punjab	14163.8	3675.12	2909.5	16321.81	157.83	228.48	11268.38	823.9	2815.27
Rajasthan	12506.43	4863.12	3149.57	20580.1	353.58	406.95	23300.35	1952.34	692.9
Sikkim	107.46	40.91	4.89	197.67	0.25	0	0	0	29.63
Tamil Nadu	26996.34	10281.76	8600.26	33001.14	1140.89	903.4	13077.16	1140.89	3115.19
Telangana	11422.32	5750	1243.48	15896.33	365.49	725.97	24077.04	604	1555.46
Tripura	524.75	86.15	28.97	27.2	41.98	0	40.67	88.17	117.8
Uttar Pradesh	39524.49	6501.05	4293.01	25043	938.79	2231	17362.03	1741.77	4100.11
Uttarakhand	2823.78	1269.45	311.28	6985.37	59.03	26.81	450.19	378.24	190.76
West Bengal	15478.1	6280.37	2279.45	18887.25	692.96	1467.94	1515.55	955.57	2642.16

Source: Central Electricity Authority, Ministry of Power, Government of India

Clean Energy for Cooking

In order to provide clean cooking fuel to all households, the Government of India had launched Pradhan Mantri Ujjwala Yojana on May 2016 to provide Liquefied Petroleum Gas (LPG) connections to 5 crore women from poor families on a concessional basis. In addition to the concessional connections of LPG, the government also provides LPG subsidy to poor households under Direct Benefit Transfer for LPG (DBTL) Consumer Scheme launched on November 2014. Additionally, the government has launched the National Biogas and Manure Management Programme for dissemination and deployment of small biogas plants in the remote, rural, and semi-urban areas and thereby facilitating use of clean

gaseous fuel for cooking and lighting. The intended objective of the scheme is to shift households from using traditional cooking fuel in rural areas and instead carry out clean and un-polluting form of cooking.

These two Centrally Sponsored Schemes has been implemented in Telangana for achieving the target of universal access to clean cooking fuel. By 2019-20, 84.21 per cent of households in Telangana are using clean fuel for cooking. As per the National Family Health Survey-5 (2019-20), 91.8 per cent of households in Telangana are using clean cooking fuel. According to data released for 22 States and UTs, Telangana stands 2nd after Goa (96.5 per cent) in the country in terms of provision of clean cooking fuel to the households.

Table 7.13a: State-wise Proportion of Households Using Clean Cooking Fuel during 2019-20
(Electricity, LPG/Natural Gas, Biogas)
(in per cent)

State	Per cent
Andaman & Nicobar Islands	79.8
Andhra Pradesh	83.6
Assam	42.1
Bihar	37.8
Dadra & Nagar Haveli and Daman & Diu	79.9
Goa	96.5
Gujarat	66.9
Himachal Pradesh	51.7
Jammu & Kashmir	69.2
Karnataka	79.7
Kerala	72.1
Ladakh	76.3
Lakshadweep	59.4
Maharashtra	79.7
Manipur	70.4
Meghalaya	33.7
Mizoram	83.8
Nagaland	43
Sikkim	78.4
Telangana	91.8
Tripura	45.3
West Bengal	40.2

Source: National Family Health Survey, Round-5, 2019-20, Ministry of Health and Family Welfare, GOI

Table 7.13b: District-wise Proportion of Households Using Clean Cooking Fuel in Telangana
(Electricity, LPG/Natural Gas, Bio-Gas)
(in per cent)

District	Per cent
Adilabad	81.6
Bhadradi Kothagudem	89.2
Hyderabad	99.5
Jagitial	94.7
Jangoan	91.1
Jayashankar Bhupalapally	90.3
Jogulamba Gadwal	86.1
Kamareddy	82.3
Karimnagar	94.9
Khammam	97.1
Kumaram Bheem Asifabad	85.8
Mahabubabad	86.6
Mahabubnagar	85.9
Mancherial	93.1
Medak	80.1
Medchal-Malkajgiri	99
Nagarkurnool	87.3
Nalgonda	94.6
Nirmal	88.8
Nizamabad	92.4
Peddapalli	96.6
Rajanna Sircilla	96.6
Ranga Reddy	97
Sangareddy	81.1
Siddipet	93.2
Suryapet	94.5
Vikarabad	76
Wanaparthy	88.9
Warangal Rural	87.8
Warangal Urban	94.6
Yadadri Bhuvanagiri	94.9

Source: National Family Health Survey, Round-5, 2019-20, Ministry of Health and Family Welfare, GOI

Increasing Renewable Energy Share in the Total Final Energy Mix

For increasing the share of renewable energy in total energy consumption and marching towards achieving the goal of fossil-free India, the Government of India has been implementing various schemes. The National Solar Mission, launched on January 2010, aims at generating 100 GW of grid connected solar power by 2020. It also aims at reducing cost of solar power generation in the country preliminarily by domestic production of raw materials and promoting Research and Development. Further, in order to provide modern energy to areas where either the grid power is not available or unreliable, the Off-Grid Solar PV Application Programme launched in 1992 and implemented by the Ministry of New and Renewable Energy. The programme aims to demonstrate and promote off-grid applications of solar photovoltaic (SPV) systems for meeting lightening requirements of individuals, institutions, communities, commercial and industrial establishments. The Pradhan Mantri Kisan Urja Suraksha evam Uttham Mahabhiyan (PM KUSUM) was launched in 2019 for installation of standalone solar pumps in off-grid areas and to solarize existing grid connected agricultural pumps. Atal Jyoti Yojana (AJAY) was launched on September 2016 to provide Solar LED street lights.

The Government of Telangana has also taken vigorous initiatives for increasing the share of renewable energy in the total energy mix. The government has created Telangana State Renewable Energy Development Corporation Limited (TNREDCO) as the nodal agency to look into the matters of renewable energy (RE). The aim of TNREDCO is to promote the Energy Conservation Initiatives and Renewable Energy programmes/ Projects. It promotes, develop, enforce, encourage, popularize and carry out research & consultancy for implementation of energy efficiency and renewable energy projects in the state. The TNREDCO has entrusted with monitoring and verification of initiated Renewable Energy Technologies. It also entrusted with import, upgrade and adapts upcoming technologies in areas of Renewable Energy and Energy Conservation.

At present, RE constitutes 25 per cent of installed capacity for the year 2019-20 (4,017.32 MW out of total installed capacity of 16,024.02 MW during 2019-20). During 2014-15 to 2019-20, total installed capacity under RES has grown at massive rate of 77.60 per cent (CAGR). The private sector is on forefront in RES with installed capacity of 3,966.1 MW. The government has set a target of 5,000 MW of solar energy by 2030, of which 4,017.32 MW is already installed.

Table 7.14 Sector-wise Total Installed Capacity of RES in Telangana (in MW)

Sector	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
State	119.11	0	0	40.22	41.22	41.22	41.22
Private	705.66	91.45	1545.88	3609.3	3936.44	3966.1	4326.77
Central	0	0	0	10	10	10	10
Total	824.78	91.45	1545.88	3659.52	3987.66	4017.32	4377.99

Source: Central Electricity Authority, Ministry of Power, Government of India

In case of generation, the electricity generation through Renewable Energy Sources (including small hydro power & others) in Telangana has increased drastically from 1,027.9 MU in 2015-16 to 6,794.24 MU in 2019-20 (Central Electricity Authority, Ministry of Power, Government of India). During the same period, the generation

through RES in Telangana grew at the massive rate at 65.47 per cent. In terms of ranking, the position of Telangana has improved from 14th place in 2014-15 to 8th place in 2019-20. Its share in total generation of RES in the country has improved from 1.57 per cent in 2015-16 to 4.91 per cent in 2019-20.

Figure 7.4 Share of RES in Total Installed Capacity

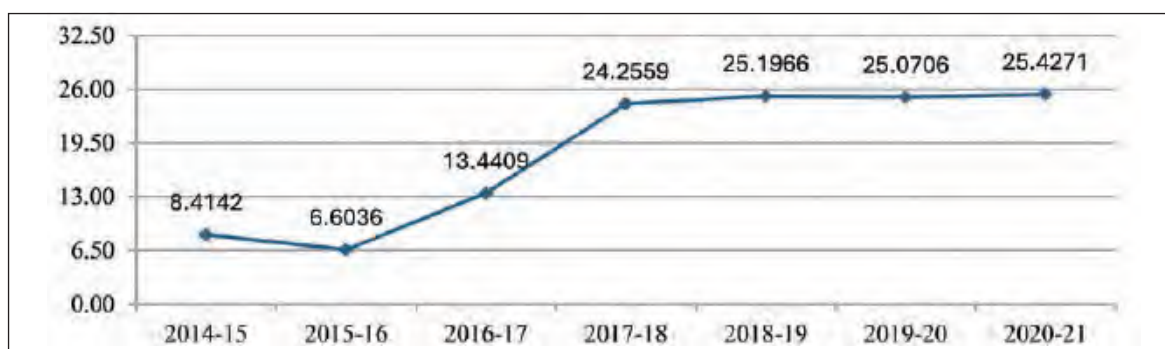


Table 7.15 State-wise Electricity Generation through RE Sources
(Including Small Hydro Power & Others) in Telangana (in MU)

State	2015-16	2016-17	2017-18	2018-19	2019-20
Andaman Nicobar	18.72	20.03	19.65	30.42	17.3
Andhra Pradesh	3106.61	5483.26	10597.47	14550.51	13993.2
Arunachal Pradesh	18.44	13.6	0.7	1.75	2.24
Assam	90.94	63.13	24.49	20.73	58.76
Bihar	165.11	283.32	309.06	488.14	358.67
Chandigarh	3.4	13.16	7.87	13.51	13.34
Chhattisgarh	1202.42	1446.22	1069.21	945.1	1107.87
Dadra and Nagar Haveli	0.5	1.31	5.23	5.76	6.19
Daman & Diu	4.25	14.43	18.53	18.94	21.83
Delhi	128.97	144.73	241.09	287.65	423.67
Goa				0	0.82
Gujarat	8003.73	9497.99	11759.63	13976.86	17716.93
Haryana	1343.15	449.54	560.7	662.37	733.5
Himachal Pradesh	1921.77	2110.71	1903.05	2287.93	2167.24
J & K	304.79	326.12	324.37	312.2	443.13
Jharkhand	19.77	38.47	19.47	19.14	17.47
Karnataka	10061.03	9585.68	13463.98	21657.53	25648.42
Kerala	618.78	562.72	774.32	770.33	804.74
Lakshadweep	1.02	1.59	1.79	1.12	0.66
Madhya Pradesh	2910.42	5268.67	6292.9	8246.46	8297.88
Maharashtra	10756.58	11292.7	12036.98	14974.91	13985.79
Manipur	0	0.01	0.15	1.88	4.2
Meghalaya	65.96	59.1	70.56	50.51	62.73
Mizoram	27.62	49.62	54.67	40.09	50
Nagaland	88.73	92.73	91	87.46	75.88
Orissa	434.45	507.71	517.56	653.45	783.2
Puducherry	0	0.33	1.17	2.58	4.14

State	2015-16	2016-17	2017-18	2018-19	2019-20
Punjab	1474.2	2149.49	2343.87	2445.21	2739.43
Rajasthan	6600.24	7973.85	9484.23	11863.38	14332.06
Sikkim	41.93	35.78	30.54	28.09	60.61
Tamil Nadu	9331.47	15153.87	16179.86	16898.48	19763.88
Telangana	1027.9	1999.89	4632.28	7046	6794.24
Tripura	18.47	46.47	44.48	82.07	28.1
Uttar Pradesh	3201.49	3715.66	4606.29	5694.81	5143.2
Uttarakhand	703.42	999.19	1184.5	1104.97	1193.95
West Bengal	1608.15	1569.77	1590.54	1486.15	1474.98

Source: Central Electricity Authority, Ministry of Power, Government of India

The Solar Policy, 2015 aims at creating an enabling environment for prospective solar power developers to harness substantial quantum of solar power and increase solar power projects. Solar Parks are proposed to be set up under this scheme for facilitating Solar Power Project, manufacturing of components, Research and Development centres, training centres, and financial institutions. The Solar Roof-Top Projects has been promoted on public buildings, domestic, commercial and industrial establishments, as a part of decentralised generation of power. Moreover, the State Government, in collaboration with the Centre, has been promoting use of solar powered pump sets

and also aimed at replacing conventional pump sets with solar pump sets.

Further, the Telangana Wind Power Policy 2016 encourages companies and other entities to set up wind power projects by improving the ease of doing business, giving fiscal incentives and exemptions. The government is also promoting roof-top based wind and wind-solar hybrid systems.

Considering the various initiatives undertaken for increasing share renewable energy in the total energy mix, following table indicates total renewable energy expected to be generated in Telangana by 2030 (data provided by TSREDCO).

Table 7.16 The Renewable Energy Generation (in MW) Plan in Telangana State for Year 2030

State	Wind Power	Small Hydro Power	Bio-Energy			Solar Incl Rooftop	Total
			Biomass Power	Bagasse Cogeneration	Waste to Energy		
Telangana	2000	200	65	72	100	5000	7437

The share of renewable energy in total final energy mix of Telangana was 10.36 per cent for NPDCL and 10.63 per cent for SPDCL in 2019-20. In order to increase renewable energy share, the emphasis is put on the solar energy sector with aim of reaching 5000 MW by 2022-23.

Energy Efficiency

The Government of India has been implementing various schemes for promotion of energy conservation and energy efficiency practices. The

Bureau of Energy Efficiency under the Ministry of Power has initiated various schemes for enhancing energy efficiency in households, commercial buildings, equipment and appliances, agriculture, and industry. The Standards and Labeling programme for equipment and appliances was introduced in 2006 to promote energy saving practices among the consumers, and the Energy Conservation Building Code was introduced in June 2017 for new commercial buildings to promote energy conservation practices. Agriculture

Demand Side Management was introduced during XI plan to induce efficiency in agriculture sector and to encourage use of energy efficient pump sets, and Municipal Demand Side Management was introduced during XI plan to improve energy efficiency of Municipalities, promotion of energy efficient technologies in Small and Medium Enterprise, and promotion of use of LED bulbs.

On similar lines, Government of Telangana has also integrated and prioritized the energy efficiency and conservation in its energy security strategy. These include Telangana State Energy Conservation Building Code (TSECBC) 2014 for energy-efficient design and construction of commercial and non-residential buildings, implementation of TSECBC in municipal buildings, Energy Audit for increasing energy efficiency by reducing the energy consumption in organisations, inclusion of energy efficiency norms in public procurement guidelines for lighting and appliances, and Industry Energy Efficiency for encouraging energy audit and energy efficient measures and strategies in industries (especially in energy-intensive industries).

The Government of Telangana has been promoting use of LED lights in domestic use by replacing incandescent bulbs and replacement of conventional street light with LED Street light. These initiatives are intended to enhance efficiency in energy consumption and reduction in cost of energy use by reducing the electricity consumption.

The Energy Efficiency Services Ltd. (EESL) has been distributing LED bulbs, LED tube lights, and energy efficient fans in the state under the Centre Government's Scheme Unnat Jyoti by Affordable LEDs for All (UJALA) launched in May 2015. During 2016-2020, about 14 lakhs of LED bulbs were distributed in Telangana under the scheme (Bureau of Energy Efficiency Report, 2021).

The State Government has also been implementing Street Lighting National Program (SLNP) for replacement of existing conventional street light with LED Street light. As on April 2021, 12,76,550 LED street lights have been installed in the state (SLNP Dash Board).

Further, as a part of efficient management of LED street light project, the Greater Hyderabad Municipal Corporation (GHMC) has introduced Centralised Control and Monitoring System (CCMS) in 2017. Under this system, the Street lights can be switched on/off from CCMS.

The Bureau of Energy Efficiency initiated the Standard and Labelling Scheme for home appliances and equipment in the year 2006. The star rating indicated on the appliances and equipment indicates the energy efficiency. Higher the star rating, higher is the energy efficiency of the device and lower will be the energy consumption. The Telangana State has incorporated energy efficiency norms in public procurement guidelines for lighting and appliances. As per the Council on Energy, Environment and Water (CEEW) report (2020), 86 per cent of households in Telangana use LED lamps for lighting.

The Government of Telangana has also introduced energy auditing in government buildings and social welfare government hostels. Energy survey has been carried out in post offices and fire stations and replacement of existing inefficient appliances with energy efficient appliances has been done. Model Energy Efficient Village Campaign was implemented in Mahasamudram village, Peddakottapally Mandal, Nagarkurnool District and Gamy Naik Thanda, Kollapur Mandal, Nagarkurnool District (Bureau of Energy Efficiency Report, 2021).

Efficacy of Interventions

Universal Access to Electricity

Telangana Government's effort in increasing power generating capacity resulted in ensuring 24x 7 power supplies to all sectors. Telangana is one of the top five states in the country in terms of per capita electricity consumption. There are no power holidays and crop holidays in the state.

Clean Energy for Cooking

The state has made remarkable progress in ensuring clean cooking fuel to households. As

per the NFHS-4 and NFHS-5 the proportion of households using clean cooking fuel increased from 67.3 per cent in 2015-16 to 91.8 per cent in 2019-20. The progress is achieved mainly under successful implementation of Deepam Scheme and Pradhan Mantri Ujjwala Yojana.

Increasing Renewable Energy Share in the Total Final Energy Mix

The state has made remarkable progress in increasing share of renewable energy in total energy mix in a short period, especially in case of solar energy. After launching “Telangana State Solar Policy - 2015”, the solar capacity of the state increased from mere 74 MW at the time of formation to 3741 MW and stands amongst the top states in this regard. Another 1819 MW of Solar Power is yet to be commissioned.

Energy Efficiency

As per the State Energy Efficiency Index, 2019, prepared by Bureau of Energy Efficiency, Ministry of Power, Government of India, Telangana falls into the ‘contender’ category. The achievement of the state in the areas of energy efficiency and conservation is due to interventions such as mandatory compliance with Energy Conservation Building Code (ECBC) for all new commercial buildings, implementation of ECBC to municipalities, energy saving targets set for Municipalities, implementation of Centralised Energy Management System for municipal street lighting, mandatory energy audits, and implementation of energy efficiency norms in public procurement guidelines for lighting and appliances.

7.3 The Way Forward

Universal Access to Electricity

In order to ensure supply of affordable and sustainable power in increasingly large quantities, few capacity addition programs have been undertaken. Telangana has geographical advantages in thermal and solar energy. Telangana has vast deposits of coal in southern India and is

being mined by state-owned Singareni Collieries Company Ltd. The company also meets the thermal energy requirements of Karnataka, Tamil Nadu, Maharashtra, Andhra Pradesh and Kerala. Similarly, Telangana has a vast solar potential with average insolation (incoming solar radiation) of nearly 5.5 KWh/m² for over 300 sunshine days a year. To leverage these two advantages, TSGENCO has planned capacity addition program by installing 4,810 MW new thermal power projects and 20 MW new solar power projects.

The TSDISCOM has thought up initiatives to improve its financial health, but the revenue gap per unit of power sold of distribution utilities is still high (Rs 1.45 per unit in 2020. This is, infact the highest anywhere in the country, resulting in loss of Rs. 8,120 crore per annum. In order to make DISCOM financially strong and stable, there is a need for further up-gradation and strengthening of sub-transmission and distribution network, improving operational performance like achieving reduction in AT&C losses (13.36 per cent in 2019-20) and reducing transmission losses (2.42 per cent in Oct. 2020), reducing service costs and rationalisation of tariffs.

The DISCOM is evaluating the possibilities of installing smart meters on prepaid mode to all the consumers, which would lead to improvement in billing and collection efficiency. These improvements would further result in reduction in commercial losses. Supervisory Control and Data Acquisition system have been installed in Hyderabad and Warangal for reducing interruption duration and reliability of supply. It is also planned to implement this project in all Municipal towns. Further, the TSDISCOMs are going to take up segregation of AGL feeders and connect them to the grid. These initiatives are intended to reduce technical losses, reduction in peak power and lowering power purchase requirements.

TSTRANSCO has planned for capital expenditure under Renovation, Modernization, and Improvisation of existing transmission system (RMI scheme), which is aimed at reducing

outages of substation equipment and improving reliability and stability of the transmission system. TSTRANSCO is planning to add six 400KV Sub -Stations, 220KV Sub -Stations, 90 132KV Sub -Stations along with associated lines of 8,530 CKM at an estimated cost of around Rs. 14,271 Crores by 2030.

In Telangana, TSSSLDC has been instrumental in adding Solar Capacities at different voltage levels under the Distributed Generation Model, which helped in optimal Transmission Network and better Grid Management. Other states are also trying to emulate this model.

These initiatives are intended to ensure the sustenance in the Government's flagship program of providing 24x7 uninterrupted power to all

sectors by strengthening DISCOMs financially making the transmission system more efficient, and enhancing power generating capacity.

However, there is a concern over the declining Plant Load Factor (PLF), that declined from 85.34 per cent in 2014-15 to 75.05 per cent in 2019-20. The lower utilisation of thermal plants implies increasing financial burden in the form of fixed cost. The power for all program considers 90 per cent of PLF for ensuing 24x7 power to all categories of consumers. However, the actual PLF is way lower than the required proportions. Some of the state sector thermal utilities have shown a very low PLF in the year 2019-20 like Kothagudem TPS (Stage-7) (50.92 per cent) and Kothagudem TPS (62.22 per cent).

Table 7.17 State-wise Peak Load Factor of Thermal and Nuclear Electricity Generating Plants
(in per cent)

State	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Andhra Pradesh	79.09	71.81	67.44	59.29	55.28	55.91
Assam	0	0	61	51.33	64.44	59.65
Bihar	47.09	50.67	67.29	67.08	73.42	65.84
Chhattisgarh	66.67	64.11	64.19	63.46	59.31	58.72
Gujarat	68.56	64.77	62.15	60.7	60.24	60.71
Haryana	51.88	40.26	36.79	53.1	51.18	34.44
Jharkhand	47.12	52.59	47.73	60.56	66.65	64.67
Karnataka	72.94	77.11	70.87	57.85	37.79	28.62
Madhya Pradesh	61.73	63.09	61.07	72.78	76.66	65.73
Maharashtra	51.45	52.62	48.91	50.31	53.63	47.65
Orissa	63.08	68.56	61.2	60.92	58.96	54.2
Punjab	50.35	43.82	41.69	43.16	49.82	41.89
Rajasthan	68.53	61.47	59.86	56.34	77.73	81.54
Tamil Nadu	70.32	66.95	60.58	58.15	60.84	56.05
Telangana	85.34	81.43	77.69	80.82	79.92	75.05
Uttar Pradesh	73.51	72.02	67.41	66.32	62.85	60.53
West Bengal	60.37	55.38	59.71	60.2	59.16	57.01
Total (All India)	64.25	62.29	59.81	60.72	60.3	55.99

Source: Central Electricity Authority, Ministry of Power, Government of India

Table 7.18 Utility-wise Peak Load Factor of Thermal Electricity Plants in Telangana for the Year 2019-20

Utility	PLF
Singareni TPP	87.54
Bhadradi TPP	0
Kakatiya TPS	78.19
Kothagudem TPS	62.22
Kothagudem TPS (New)	81.6
Kothagudem TPS (Stage-7)	50.92
Ramagundem - B TPS	72.51
Total State Sector	75.08
Ramagundem STPS	74.99
Telangana STPS	0
Total Central Sector	74.99

Source: Central Electricity Authority, Ministry of Power, Government of India

Increasing Renewable Energy Share in the Total Final Energy Mix

The state has made significant progress in increasing share of renewable energy in total installed capacity and in increasing use of renewable energy. Nevertheless, the state has still not been

using full potential of renewable power available in its territory. As per the Ministry of New and Renewable Energy, the total installed capacity of RES was just 16.23 per cent of total potential. This implies that there is still scope in increasing share of renewable in total energy mix.

Table 7.19 Year-wise Actual and Potential RES Installed Capacity in Telangana (in MW)

RES	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Actual	824.78	763.64	1545.88	3659.52	3987.66	4017.32
Potential	20410	24654	24858	24654	24756	24756
Percentage	4.04	3.10	6.22	14.84	16.11	16.23

Source: Ministry of New and Renewable Energy

The recent initiatives by the TSREDCO could tap the RES potential in the state. It has planned to have 7,437 MW of Renewable Energy by 2030. It has also planned to implement Floating solar PV projects on the reservoirs to meet the pumping loads for lift irrigation schemes of Godavari & Krishna rivers and Irrigation department Projects. It has also proposed to implement 1kWp on -grid solar roof top power projects to be set up in residential schemes to house major portion of BPL families of SC/ST category. The emphasis is put on the solar energy sector with aim of reaching 5000 MW by 2022-23.

Energy Efficiency

As per the State Energy Efficiency Index, 2019, there is a scope for further improvement in energy efficiency in industry and agriculture sectors as it has underperformed on these counts.

In order to increase energy conservation in all sectors, the state is in process of preparation of State Specific Energy Conservation Policy with reference to the Energy Conservation Act 2001 by Government of India and it has plan to cover all the Energy Conservation aspects relating to all sectors.

Annexure 7.1a Base Value and Targets under Goal 7

Target	National Indicator	State Indicator (SIF)	Base Value 2020	Target		
				2022	2025	2030
7.1	7.1.1: Proportion of households with access to electricity	Percentage of Households having electricity connection	100			
	7.1.2: Percentage of household using clean cooking fuel	Percentage of household using clean cooking fuel	84.21			100
7.2	7.2.1: Renewable Energy Capacity Addition in MW (Mega Watts)	Renewable energy share in the total final energy mix	NPDCL-10.36 SPDCL-10.63			

Annexure 7.2a Targets, Nodal Department and Data Source

Target	State Indicator (SIF)	Nodal Department	Data Sources
7.1	Percentage of Households having electricity connection	Energy	Energy Department, Government of Telangana
	Percentage of household using clean cooking fuel	Energy	Energy Department, Government of Telangana, NFHS-5
7.2	Renewable energy share in the total final energy mix	Energy	Central Electricity Authority, Ministry of Power, Government of India

Annexure 7.3a Other Data

Target	National Indicator	State Indicator (SIF)	Base Value 2020	Target		
				2022	2025	2030
7.1		Energy consumption per capita in KVH	1896			
		Minutes of Outages Per Year Per Consumer (SAIDI minutes/year/Consumer)	4891			
		Total Electricity Installed Capacity in MW (Mega Watts)	15864			
	Citizen grievance response	Percentage service standard complaints	91.76			
7.2	7.2.1: Renewable Energy Capacity Addition in MW (Mega Watts)	Renewable energy capacity addition in MW (Mega Watts)	54			
		Solar Energy Generated	3636.8	5000		
		Solar Grid Tied Rooftop in Mega Watts (Mega Watts)	117.53			

Sustainable Development Goal - 8

Promote Inclusive and Sustainable Economic Growth, Full and Productive Employment for All



Vision

Telangana focuses on promoting inclusive and sustainable economic development through prioritized industrial growth, fostering entrepreneurship and creating job opportunities along with a strong emphasis on skill development to ensure quality employment for all citizens. Now this vision is to be achieved through the attainment of sustainable development goal-8, which envisages industrial development, entrepreneurship promotion, skill development, inclusive growth, labour rights protection and skills training initiatives and strong support to MSME sector, among other things,

Achievements

- A striking feature of the State's economy is its consistently higher growth rate than all India GDP. In 2019-20 when TS registered a growth rate of 8.2 percent per annum, all India GDP growth rate was 5.0 percent per annum
- The share of agriculture has fallen significantly to about 12% in 2019-20, compared to about 16% in 2011-12. The share of industry shows a declining trend over time. The share of Services sector showed a steady rise from 53% in 2011-12 to 65% 2019-20. Agriculture has strong linkage with industry in the state, while both agriculture and industry drive the service sector
- Among the major 21 States, Telangana ranks 3 in per capita net state domestic product (PCNSDP averaged over 2017-20)- after Haryana and Karnataka and 2 in average growth rate of PCNSDP (three-year average) after Gujarat
- There has been a disproportionate relationship between economic growth and employment growth in the States true for India and many States. The State economy is dominated by services sector, which constitutes two-thirds of the State income but contributes only one thirds of employment, while agriculture sector contributing mere 12% of State income employs 43% of the workforce. In case of industry sector though its share to income and employment almost match, much of the employment comes from the unorganised sector, which by its nature provides only informal employment.
- Telangana reported 49677 registrations under Udyog Aadhaar Registration in 2019-20.
- Telangana State Society for Training and Employment Promotion (TSSTEP), Youth Services Department, has established 7 Skill Development Training Centres to train the unemployed youth in the age group 18-35 years in the potential self-employment sectors
- Telangana is one of the leading states in the implementation of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), the biggest poverty eradication and welfare programme in India. It is implemented in 32 all the districts. The Scheme guarantees 100 days of unskilled wage employment to a rural household in a financial year

Challenges

The main challenge of this goal is the creation of employment opportunities especially among the youth and women. Increasing the budgetary allocations for development programmes, devising

policies to attract private investment, promotion of industries in 2 tier towns and entrepreneurship on a wider scale, especially among poorer sections are the other challenges in realising the goal. Provision of sufficient credit to the MSMEs is also essential. The dichotomy between the structure of the economy and employment needs to be addressed to strengthen the economy. It is evident that growing services sector is not contributing to the employment growth bot in urban and rural areas. Also, a serious concern is over the informal nature of the employment and shortage of skilled workers.

8.1 The Context

Economic Growth Drives Development

Economic Growth is an important element of development in the framework of Sustainable Development Goals, or for that matter in the framework of Human Development. Both the frameworks view growth as an indicator of means to achieve non-monetary goals of what is perceived as people centric development. Much depends on how growth is reconciled with issues such as employment, poverty and inequality.

Millennium Development Goals to Sustainable Development Goals

During the late 20th century, there has been an increasing realization that measures of progress of society or a Nation should go beyond those based on money-metric. While income remains the predominant means indicator for assessing well-being, emphasis is placed more on enlarging basic choices.

That the relation between income and the wellbeing is not necessarily one-to-one is evident from the experiences of several countries. For instance, the incidence of child malnutrition in India is greater than the incidence of poverty. While highest incidence of malnutrition is in the poorest states and the lowest is not in the richest, but in one of the middle-income states.

The emphasis on 'non-income' concerns of well-being acquired greater space in the policy arena. It is in this context that an effort is made first time by the United Nations to mobilise the member Nations to commit to achieve the Millennium Development Goals. At the Millennium Summit in September 2000, the member Nations adopted United Nations Millennium declaration to reaffirm their commitment the goals of achieving sustained development and eliminating poverty.

The Millennium Development Goals (MDG) that emerged from the declaration area set of numerical targets that express key elements of human development to be achieved by 2015. This global mobilisation, helped several nations to shift the policy attention to the key elements of developments summarised in eight goals of MDG. Although significant achievements have been made on many of the MDG across Nations, progress has been uneven and left several vulnerable groups – gender, ethnic, geographical- behind.

After the expiry of the MDG target year 2015, the UN adopted a resolution of 'Transforming our World: the 2030 Agenda for Sustainable Development' which consist of a set of 17 Sustainable Development Goals (SDG).

India is a Signatory to the SDG Resolution

The SDGs are an inter-governmentally agreed set of targets relating to international development. While, the MDGs were limited to some core aspects wellbeing, the SDGs are more comprehensive and comprising all three dimensions of development viz. economic, social and environment. Also, while the goals, indicators and targets of MDGs were uniform across all nations and states, the targets and indicators are evolved in respective Indicator Framework of member Nations. Further, at state level, the indicators were evolved in a state indicator framework.

8.2 SDG-8: Targets and Indicators

Achieving sustainable growth, enhancing the productivity of the economy and creation of

employment opportunities are the main targets of SDG 8. Other related issues such as equity and poverty are dealt with separately other goals.

Table 8.1 Target Dimensions

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Sl.	Target	State Indicator (SIF)
1	8.1	8.1.1 Annual growth rate of GSDP (adjusted to price changes) per capita
2	8.2	8.2.3 Annual growth in manufacturing sector (Current prices)
3	8.2	8.2.4 Annual growth in agriculture and allied sector (current prices)
4	8.3	8.3.1 Proportion of Number of workers in unorganised sector in non-agricultural sectors to that of Total workers as per census 2011
5	8.3	8.3.2 No. of workers covered under Employees Pension Scheme (EPS)
6	8.3	8.3.4. No. of MSME units registered under the online Udyog Aadhaar registration for entrepreneurship
7	8.3	8.3.7. Growth of Registered Micro, Small and Medium Size Enterprises
8	8.3	8.3.8. Total loans outstanding to micro, small and medium enterprises
9	8.3	8.3.9. Outstanding Credit to Micro, Small and Medium Enterprises
10	8.3	Bank Linkages to SHGs to avail loans (Urban) - MEPMA
11	8.3	Bank Linkages to SHGs to avail loans (Urban) - GHMC
12	8.5	8.5.1 Youth skilled and placed (%)
13	8.5	8.5.2. Workforce Participation Ratio (WPR)
14	8.5	8.5.3. Wages earned by male-female in regular / casual employment
15	8.5	8.5.6. Share of unemployed persons in population aged 15-24 (percentage)
16	8.5	Equal average wage for men & women
17	8.5	No. of persons with disabilities provided wage employment
18	8.6	8.6.1 Youth Trained and employed under skilled development programme
19	8.6	8.6.2 Youth Trained Under Skill Development Programmes.
20	8.6	Total number of Youth trained under skill training and placement
21	8.8	8.8.2. Number of migrant workers
22	8.8	8.8.3. Number of accidents in workplace
23	8.8	8.8.4 Employment generated under MGNREGA – Person days generated
24	8.9	8.9.1 No. of tourists visited (Domestic)
25	8.9	8.9.1 No. of tourists visited (Foreign)
26	8.9	8.9.2 Tourism sector Contribution to total GSDP and its growth rate
27	8.3 and 8.8	No. of workers covered under Employees State Insurance (ESI) Act
28	8.10	8.10.3 Total banking outlets
29	8.10	8.10.4 Number of ATMs
31		Employment in formal sector (%)

Sl.	Target	State Indicator (SIF)
32		Employment in informal sector(%)
35	8.4	8.4.1. Renewable energy share in the total final energy mix
36		GSDP - Agriculture Sector Growth (at Constant Price) (%)
37		GSDP - Manufacturing Sector
38		GSDP - Tertiary sector Growth (at Constant Price) (%)
39		GSDP - Total Growth Rate (at Constant Price) (%)
40		No. of IT hubs started
41		No. of MSME Units registered
42		Per Capita Income (at Current Prices) (Rs.)
43		Percentage Of Workforce in Agriculture and its allied sector
44		Youth skilled and placed (%)
46		No. of persons with disabilities provided wage employment

Source: State indicator framework.

The following section describes salient features of the state's economy in terms its growth performance, its structure and how it compares with other states etc. The final objective is to make an assessment of the growth prospects of the state of Telangana in the context of the vision 2029. In doing so this section also considers the aftermath of COVID-19 on the state economy and how it altered the growth prospects of the state. This would be followed by the discussion on the indicators of Goal 8.

Recent Economic Performance of the State

Gross State Domestic Product⁶⁷ (GSDP) is a summary measure to gauge the economic health of a state. It represents the value of goods and services produced within the State during a given year, counted without duplication. The data on GSDP and its related aggregates provide insights on not only on the size and progress of the economy, but also on its structure and regional variations. For meaningful comparisons overtime, the GSDP estimates are expressed in terms of prices prevailing in a fixed base year. Similarly, for comparisons

across states or regions, the GSDP estimates are standardized for population.

Growth Patterns

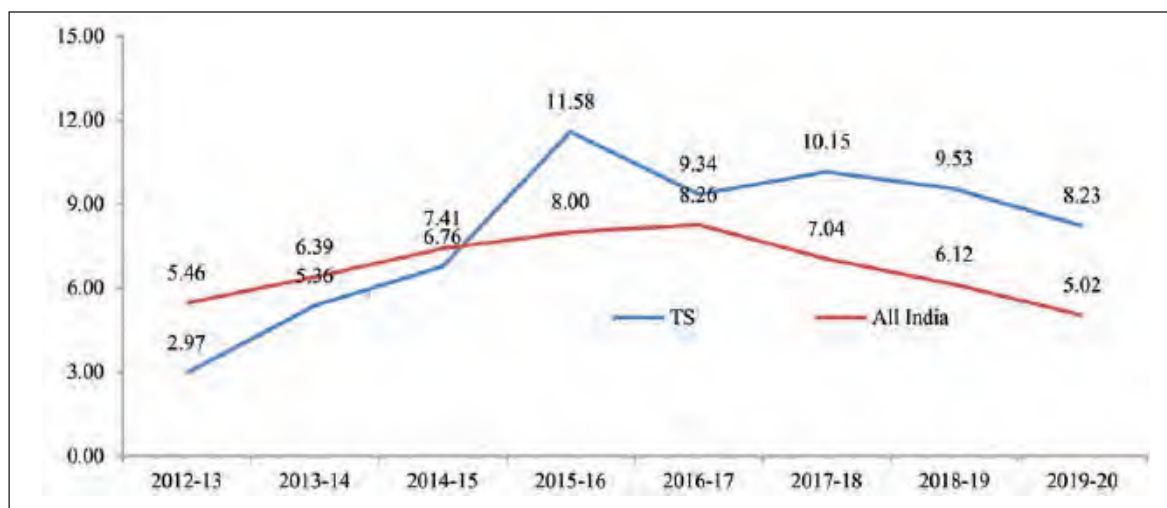
As per the SDG India Index Report 2019-20, Telangana comes under the category of front-runner and top performer with a score of 82 in achieving goal 8 and standing first amongst the Indian States. The back series estimates of Gross State Domestic Product are available for the State since 2011-12, three years prior to State formation. Prior to the reorganisation of the State (2011-2014), the GSDP of the Telangana region registered an average growth of 3-6% pa. During this period, the Industry sector registered negative growth. Subsequently, in 2015-16 (after its formation the state) the economy registered a robust growth rate of 11.6% pa. After a marginal dip in 2016-17 mostly due to poor performance of industry, the state's economy achieved growth rate of nearly 10% pa in 2017-18 and 2018-19. In 2019-20, with sluggish industry sector the growth rate declined 8% pa.

⁶⁷ The economic performance of the state is measured in terms of real Gross State Domestic Product as estimated by the State agencies following methodology suggested by National Statistical Office (NSO). In the wake of comprehensive revision of the national accounts to comply with UN system of national accounts, the NSO adopted measures based on Gross Value Added (GVA) in the new series beginning 2011-12. Although GSDP estimates for the state can be derived under new methodology, the sectoral performance can be examined only with the sectoral GVA. The rest of the chapter depends on sectoral GVA for the analysis.

A striking feature of the State's economy is its consistently higher growth rate than all India GDP, barring two years of 2012-14. The difference in the two growth rates range between 3 to 1 percentage

points. In 2019-20 when TS registered a growth rate of 8.2% pa, all India GDP growth rate was 5.0% pa (Figure 8.1).

Figure 8.1 Growth Performance of TS and All India



Source: Ministry of Statistics and Plan Implementation, GoI

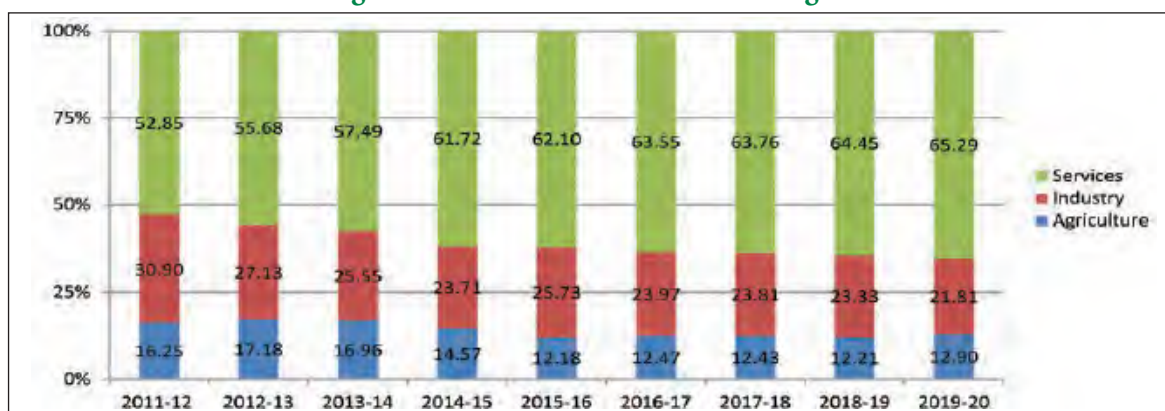
The inter-sector growth trends reveal that the service sector maintained a steady growth rate of nearly 10% pa throughout. On the other hand the performance of industry sector exhibits a low and volatile growth pattern. The industry sector suffered with a negative growth during the three period 2012-15. Its growth rebounded to 20% pa in 2015-16 only to remain near stagnant during 2016-17. During the subsequent two years, 2017-19, the industry sector registered growth rate of 7-8% pa only to fall again to a mere 1.2% pa in 2019-20. Overall the industry in the state is volatile registering an average growth rate of 4% during the last four years. As in other states, the Agricultural sector of the state is volatile. It registered double-digit growth twice (2016-17 and 2019-20) and a negative growth during 2014-15 and 2015-16. During the last four years, the average growth rate of the sector was 10% pa.

Sectoral Composition

As a result of the differential growth rates in sectors of the economy, the composition of state income changed gradually. The share of agriculture has fallen significantly to about 12% in 2019-20, compared to about 16% in 2011-12. The share of industry shows a declining trend over time. The share Services sector showed a steady rise from 53% in 2011-12 to 65% 2019-20. An analysis of inter-sectoral linkages in the economy using simple regression technique reveals that the agriculture has strong linkage with industry in the state, while both agriculture and industry drive the service sector⁶⁸ (Figure 8.2).

⁶⁸ A one per cent growth in Agricultural income would induce nearly 0.70% growth in industry sector and 0.5% growth in income from service sector. In turn a one per cent growth in industry sector would result in 1.5% growth in service sector.

Figure 8.2 Sectoral Performance in Telangana



Source: Ministry of Statistics and Plan Implementation, GoI

Regional Disparities

Question of how uniform income levels across districts of State is important issue concerning regional disparity. Almost immediately after its formation, the State reorganised the original 13 districts to form 31 new districts (and later to 33). As a result, comparable estimates of District Domestic Product (DDP) are not available to examine this question. However, the available data for the two recent years, 2017-18 and 2018-19 indicate existence of economic disparities across regions. The data reveal that the top 5 districts contribute almost 55% of the GSDP while they account for 34% of the state's population. While the rest of the 28 districts account mere 45% of the GSDP and with a 66% share in population. In the absence of time series data,

it is difficult to examine if the disparities are widening.

Telangana State in Comparison with Other Major States

The performance of the state vis-à-vis other states is commendable. Among the major 21 states, the state ranks 3 in per capita net state domestic product (PCNSDP averaged over 2017-20)-after Haryana and Karnataka and 2 in average growth rate of PCNSDP (three-year average) after Gujarat. If the current trend continues, the state can overtake Karnataka PCNSDP and emerge as number two. These patterns clearly indicate that the state of Telangana has potential to remain at the top of the table with respect to the economic growth (Table 8.2).

Table 8.2 Telangana State vis-a-vis Other States

State	PC NSDP (RS. 2011-12 Prices)	Average Gr (2017-20)	Rank	
			PCNSDP	Average GR (2017-20)
Andhra Pradesh	108396	7.0	10	6
Assam	57368	6.2	15	9
Bihar	28885	6.6	19	7
Chhattisgarh	69187	3.8	13	19
Gujarat	141767	8.4	5	1
Haryana	169776	6.2	1	10
Himachal Pradesh	138794	6.2	7	11
Jharkhand	55041	5.8	17	12
Karnataka	153011	7.3	2	4
Kerala	138566	7.1	8	5
Madhya Pradesh	56897	4.3	16	17

State	PC NSDP (RS. 2011-12 Prices)	Average Gr (2017-20)	Rank	
			PCNSDP	Average GR (2017-20)
<i>Maharashtra</i>	140622	6.3	6	8
Odisha	76502	5.8	12	13
Punjab	115751	4.4	9	16
Rajasthan	78122	4.5	11	15
Tamil Nadu	143274	7.7	4	3
Telangana	143279	8.2	3	2
Uttar Pradesh	44289	4.0	18	18
West Bengal	67688	5.8	14	14

Source: Authors own computations

Future Growth Prospects

Given the background, the state can be assumed to be on a comfortable growth path with bright prospects, even in business as usual approach. The future growth prospects of the State heavily depend on extent of contraction in the state economy during 2020-21 due to COVID-19 pandemic and how quickly it can recover⁶⁹.

As in the rest of the world, COVID-19 has taken a heavy toll on the lives and economy of the state. In order to combat the pandemic and control its spread the state imposed stringent lockdown. Though the activities in the economy are limping back to pre-pandemic levels, the overall loss to the economy has been significant (see Appendix to this section for details of impact of COVID-19 on the state economy). The estimates presented there indicate the state economy would shrink by almost 15% in 2020-21. Recovering from such a shock would require stimulating the both the demand and investment factors. Keeping this in view, projections are given for the state economy. The projections are given for period 2021-25 (period I) and for 2025-30 (period II)

The GVA (at 2019-20 prices) of State is projected to grow at 11% during period I (2021-25), which would include a good part of the post-pandemic recovery phase of the economy. Subsequently, during period II (2025-30), it is projected to grow at 9%. The sectoral growth rates and growth rates

of per capita NSDP presented below are consistent with the above scenario of overall growth.

Indicator 8.1.1: Annual Growth Rate Targets for Agriculture, Industry and Services and Overall GVA

Given the impact of pandemic during 2019-20 (see Appendix), the projections are made for the period 2020/21-2029/30. Although Agriculture sector is insulated from the pandemic, expecting this sector to grow at 10% throughout this period would be a highly improbable. A safer growth target for Agriculture sector would be average growth rate of 8% during 2020-29. Industry sector is observed to bounce back every time it registered negative growth. For example, after registering negative growth consequently for two years, it registered robust growth rate of 20% pa in 2015-16, similarly it registered 8% growth in 2017-18 after experiencing a sluggish 1% growth in 2016-17. Therefore, Industry sector can be expected to experience high growth 2021-25 at 12% pa. Thereafter, it may grow at 8% pa for next five years up to 2029-30. This would imply a growth rate of 9.7% pa for industry during 2021-30. Service sector in the state registered steady growth rate of 8-10% since state formation. Given its high share in the State income, service sector plays a crucial role in recovering the economy and take a lead to take the state to it to higher growth path. Therefore it is assumed to grow at 11.5% pa during 2021-25 and at 10% thereafter, 2025-30- implying a 10.7% growth rate for the 9 year period (Table 8.3).

69 If projections are made with 2019-20 as base, ignoring the impact of the pandemic on the economy in 2020-21, any assumed growth rate would under achieve the targets.

Table 8.3 Growth Assumptions

Period	Growth Assumptions			
	Agriculture	Industry	Services	All
2021-25	8.0	12.0	11.5	11.0
2025-30	8.0	8.0	10.0	9.3
2021-30	8.0	9.7	10.7	10.0
2020-30	8.0	4.2	7.8	7.2

Source: Own estimates

Overall, the growth assumptions imply a 10% in state income during 2021-30. However, if the base year is taken as 2019-20, the overall growth would be 7%, which is almost similar to the average growth of the state since 2011-12.

Growth and Employment

There has been a disproportionate relationship between economic growth and employment growth in the state- although this is true for India and many states. The State economy is dominated by services sector, which constitutes two-thirds of the state income but contributes only one thirds of employment, while agriculture sector contributing mere 12% of state income employs 43% of the workforce. In case of industry sector though its share to income and employment almost match, much of the employment comes from the unorganised sector, which by its nature provides only informal employment (Figure 8.3).

This dichotomy between the structure of economy and employment explains why when the economy is growing at around 9.71% per annum (between 2015-16 and 2017-1) employment declined by 6.71 per cent per annum. It is clear that growing services sector is not contributing to the

employment growth – either in urban areas or is yet to make any significant mark in rural areas. Also, a serious concern is over the informal nature of the employment.

The MSME sector is considered as a catalyst to economic growth with about 30 per cent contribution to Gross Domestic Product. Various government initiatives have been undertaken to promote growth of the sector which include formalization and ensuring adequate credit flow. The Government of India has introduced hassle-free procedure of registration of MSME units under Udyam Registration which is free of cost, paperless, and based on self-declaration. Telangana reported 49677 registrations under Udyog Aadhaar Registration (previous registration facility) in 2019-20.

The Government of Telangana has introduced Telangana State Industrial Project Approval and Self-Certification System (TS-iPASS) Act, 2014 to create an investor-friendly environment. Under this Act, a single point self-certification system is introduced for processing of applications and issuing of various clearances from the government for setting up of industries. Moreover, the

Figure 8.3 Structure of Economy and Employment

Source: Ministry of Statistics and Plan Implementation, GoI and NSSO PLFS

Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry, Government of India has suggested 372 reforms to ensure Ease of Doing Business (EODB) in 2017. Telangana has achieved 100 per cent compliance in the reforms suggested by DPIIT in 2017. The Government of Telangana has also given incentives to new entrepreneurs to set up their enterprises by extending fiscal benefits under T-IDEA (Telangana State Industrial Development and Entrepreneur Advancement) and T-PRIDE (Telangana State Program for Rapid Incubation of Dalit Entrepreneurs).

Moreover, to ensure sufficient credit to the MSME sector, during 2019-20 Rs. 31355.25 crore credit is targeted under the priority sector and actual disbursement stands at Rs. 49849.88 crores, which is 158.98 per cent of the targeted amount.

The total loans outstanding of MSME sector which comes under priority sector lending norms stands at Rs. 61975.9 crores during 2019-20. Out of total outstanding loan, small enterprises constitute 46.09 per cent of outstanding loan followed by Micro enterprises 39.44 per cent, and medium enterprises 14.46 per cent.

The labour force participation rate among adult male (15 years and above) is 72.4 per cent while it is 38.3 per cent among adult women. Unemployment among the youth (15 to 29 years) is 27.4 per cent as compared to 8.4 per cent among all ages. The percentage of Job seekers among educated people is also very high at 34.1 per cent. It is 27.2% among diploma holders and 31.3% per cent among graduates and post-graduates. One reason for this could be that educated prefer to wait rather than take up any employment.

Approach of the Central and State Governments on Employment and Skill Development

Government of India has taken several steps such as enactment of Maternity Benefit (Amendment), 2017, providing training through Women Industrial Training Institutes, National Vocational Training Institutes and Regional Vocational Training Institutes to improve the employability

of women. The National Skill Development Corporation trained so far around 5.2 million students (NITI Aayog, 2019-20).

Central government schemes like the Micro Units Development and Refinance Agency (MUDRA) for funding the unfunded, Pradhan Mantri Kaushal Vikas Yojana (PMKVY) for imparting vocational education for youth, Deen Dayal Upadhyay Gramin Kaushal Yojana (DDU-GKY) for creating employment opportunities for rural youth are being implemented since 2015.

The vision of Telangana state is to achieve the level of development that will provide its people the best opportunities for prosperity, well-being and lead a high-quality life and include every individual in the development process. In line with the Decent Work target of SDG 8, the vision of the state is that by 2030, Telangana will have a skilled workforce that stands for quality, productivity, workmanship and initiative. Increasing the budgetary allocations for development programmes, devising policies to attract private investment, promotion of industries in 2 tier towns and entrepreneurship on a wider scale, especially among poorer sections, are the strategies that the government is adopting to realise its vision.

The state government gave priority to youth employment in its emphasis on 'Neellu, Nidhulu, Niyaamakaalu (water, funds and jobs). Not only the Labour Department of the state, but also other Departments are devising policies of employment generation and skill development specific to their activities.

Labour Employment Training and Factories Department (LET&F) is the administrative department for enforcement of various State and Central Laws for the Welfare of Labour. The Labour Department is a regulatory department implementing 26 Labour enactments ensuring wages, safety, welfare, working hours, weekly & other holidays, leave, bonus, gratuity etc., and promotion of welfare and social security of workers through its implementation machinery. Department of Employment and Training is

working towards creation of skilled manpower and achievement of full, productive and decent work for all and to ensure equal access to all women and men to quality technical and vocational education and to reduce the number of unemployed youth.

Telangana State Skill Development Mission (TSSDM) has been launched as State Implementing Agency (SIA) for skill development to provide employment to unemployed youth. It aims at imparting industry-required skill training to the entire workforce and thereby enhance their employability. It works for improving the employability of new workforce and enhancement of skill set of existing workforce. The TSSDM has a long-run strategy of building skilled workforce by introducing vocational education from school level.

Telangana Academy for Skill and Knowledge (TASK) is a unique skill development initiative from IT, E&C Department aimed at improving the quality of graduates coming out of colleges by imparting industry-grade skill sets. More than 800 colleges have registered with TASK and over 1 lakh youth from across Telangana have been skilled since TASK's inception in June 2015. The Indian School of Business (ISB) in partnership with TASK launched Technology Entrepreneurship Programme (TEP) which aims to foster entrepreneurship by guiding engineering students in creating technology-enabled products and services. Additionally, the programme helps improve their communication, teamwork and problem-solving and decision-making abilities. During 2015 43,271 students, during 2016 62,678 students were trained through TASK. In 2015, 888 faculty members, in 2016 2045 faculty members were accorded skill training.

To create self-employment opportunities for the unemployed youth, Economic Support Scheme was launched. For self-employment schemes, subsidy used to be at a maximum sum of Rs.1,00,000. On the total unit cost, maximum subsidy of 60 percent was given. At present it has been increased to 80 percent and the present maximum limit for

total unit cost has also been increased to 5 lakhs. As on May 2018, 74,019 SCs and 46694 STs were benefitted.

Telangana State Society for Training and Employment Promotion (TSSTEP), Youth Services Department, has established 7 Skill Development Training Centres to train the unemployed youth in the age group 18-35 years in the potential self-employment sectors like Fashion Designing, Zari Zardoshi, Beautician, Ms-Office/ DTP, Mobile Servicing, CCTV Installation and Servicing and Domestic Electrification. The society intends to open Skill Development Training Centres in 31 districts.

Society for Employment Promotion and Training in Twin Cities (SETWIN), Youth Advancement, Tourism and Culture Department, is focusing on establishment of training centres to impart suitable skills to the unemployed youth in the age group of 18-35 years and also provide employment opportunities.

Society for Elimination of Rural Poverty (SERP), Department of Rural Development, by providing bank credit linkage to SHGs, is focusing on livelihood activities to realize family income enhancement and thereby achieve reduction of poverty. The SERP-Telangana Rural Inclusive Growth Project (TRIGP) aims at making the state poverty free by 2017 through a strategy of looking beyond growth and focus on generation of employment to the millions of the youth in the State. This would eventually result in a faster reduction in unemployment and poverty through skill development and also help bridge multiple divides.

Telangana is one of the leading states in the implementation of Mahatma Gandhi National Rural Guarantee Scheme (MGNREGS), the biggest poverty eradication and welfare programme in India. It is implemented in 32 all the districts. The Scheme guarantees 100 days of unskilled wage employment to a rural household in a financial year (Socio-Economic Outlook, 2020).

8.3 The Way Forward

Low Work Participation Among Women and Youth: The work participation ratio among the population 15-59 years is 54 percent in the state against 49.5 percent at the national level during 2017-18. These ratios during 2018-19 were 54.9 and 50.3 respectively. The work participation ratio among the youth (15-29 years) is 29.5 during 2018-19 which is not only lower than all-India at 31.2 percent but it also declined from 32.0 percent in 2017-18. The work participation ratio among women is lower than that of males- 38.0 and 72.5 percent respectively during 2018-19. However, the women participation ratio in the state is higher than all-India. There has been an improvement in the rural work participation ratio from 57.9 percent in 2017-18 to 60.9 percent during 2018-19. Work participation ratios among the youth and women need to be increased.

Slow Pace of Structural Change Especially Among Women: According to 2011 Census, the percentage of workers in agriculture and allied activities in Telangana is 56 percent. The pace of decline in the share of agriculture and allied workers in total workers is very slow in the state. It declined from 60.6 percent in 2001 to 56.3 percent in 2011. The recent survey shows that agriculture and allied activities contribute employment to 43.6 workers during 2018-19. However, still more than 50 percent of women work in agriculture as against only 37 percent among males.

Employment in Informal Sector (%): As per the definition of National Commission for Enterprises in the Unorganized Sector (NCEUS), the informal sector workers comprise 69 percent in the state which is slightly lower than all-India average of 69.8 percent during 2018-19. However, the percentage of informal workers among females is higher in the state at 70.9 percent than all-India at 59.4 percent during this period.

Low Coverage of Workers under Social Security Benefits

According to PLFS 2018-19 data, among the regular/salaried non-agricultural workers, 74

percent of workers entered into job without written contract, 61 percent are not eligible for paid leave and 62 percent are not availing any of the social security benefit in the state. Around 71 percent female regular/salaried non-agricultural workers in the state are not availing any social security benefit as against 54 percent at all-India level

Most of the Non-agricultural Workers are Absorbed in Low Productive Unorganised Sector: The unorganised non-agricultural sector suffers from low labour productivity. Gross value added per worker is only Rs. 8321 per month. It is very low in rural units as compared to urban units - Rs. 5390 per month in the former as against Rs. 10,176 in the latter. The condition of own account enterprises is very bad with a meagre value added per worker at Rs. 5713 per month (NSSO. 2015-16).

Gender Inequality in Wages: The wages rates from PLFS 2018-19 for casual labour show that both in rural and urban areas the female wages are lower than the prescribed minimum wages by 22 percent and 7 percent respectively. In the case of regular/salaried workers the female wage is half of that of male wages in rural areas while it is 70 percent of male wages in urban areas. Thus there is a wide gap between male and female wages especially in rural areas.

Share of Unemployed Persons in Population Aged 15-24: The share of unemployed persons in the population aged 15-24 is 9.3 percent in Telangana as against 5.4 percent at all-India during 2018-19. The share of unemployed among 15-24 years is higher among males (13.4 percent) than among females (5.4 percent). Further, the share of unemployed among females is higher in urban areas than that of rural areas.

Employment Generated under MGNREGA – Person Days Generated

The average number of days per worker generated under MGNREGA is 26.3 in the state which is lower than all-India average of 33.6 during 2019-20. The state is performing well in increasing the number of days per person constantly from

2016-17 to 2018-19. However, the average number of days declined from 27.8 in 2018-19 to 26.3 in 2019-20. Similar declining trend is observed among males, females and among SCs and STs in the state.

Number of Persons with Disabilities Provided Wage Employment

The percentage share of disabled persons provided employment in the total under MGNREGA in the state was 1.41 percent during 2016-17. The share of disabled declined gradually and reached 1.30 percent during 2019-20.

Shortage of Skilled Workers

There is a severe shortage of skilled workforce in the state. According to PLFS 2018-19, the percentage of workers with any kind of technical training (formal and informal) among the age group of 15-29 years is 10 percent and the percentage of formal technical training workers is around one

percent. Thus, the major challenge for the state is two-fold-train the unskilled unemployed to increase their employability and train the existing unskilled workers to enhance their productivity and earnings.

These conditions restrain the state from achieving full, productive, and decent employment. Financial, technical and marketing support is needed for those engaged in informal sectors with low productivity. Investment in skill training in potential areas viz., construction which covers a wide range skill related works such as plumbing, carpentry, electrical work etc. health sector which includes nursing, paramedical etc., targeting vulnerable groups make employment growth more inclusive. Strategies towards work-relevant education systems, career guidance, technical and vocational education and training (TVET) and on-the job training will increase the skills and employability.

Table 8.4 Achievement of Goal - 8 in Telangana

Sl. No	Target	State Indicator (SIF)	Achievement 2019-20	Target 2022-23	Target for 2025-26	Target 2030-31
1	8.1	8.1.1 Annual growth rate of GSDP (adjusted to price changes) per capita	11.60%			
2	8.2	8.2.3 Annual growth in manufacturing sector (Current prices)	3.50%			
3	8.2	8.2.4 Annual growth in agriculture and allied sector (current prices)	19.30%			
4	8.3	8.3.1 Proportion of Number of workers in unorganised sector in non-agricultural sectors to that of Total workers as per census 2011	41.65%			
5	8.3	8.3.2 No. of workers covered under Employees Pension Scheme (EPS)	1361773			
6	8.3	8.3.4. No. of MSME units registered under the online Udyog Aadhaar registration for entrepreneurship	49677			
7	8.3	8.3.7. Growth of Registered Micro, Small and Medium Size Enterprises	5150			
8	8.3	8.3.8. Total loans outstanding to micro, small and medium enterprises	61975.9			

Sl. No	Target	State Indicator (SIF)	Achievement 2019-20	Target 2022-23	Target for 2025-26	Target 2030-31
9	8.3	8.3.9. Outstanding Credit to Micro, Small and Medium Enterprises	49849.88 60951.99 (as per SLBC)			
10	8.3	Bank Linkages to SHGs to avail loans (Urban) - MEPMA	29729 SHGs (1406.26 crores)	33314 SHGs (1249.34 crores)	35814 SHGs	40200 SHGs
11	8.3	Bank Linkages to SHGs to avail loans (Urban) - GHMC	9665 SHGs (401.25 crores)	12120 SHGs (399.40 crores)	15500 SHGs (509.75 crores)	19500 SHGs (650.60 crores)
12	8.5	8.5.1 Youth skilled and placed(%)	319 Job melas & 1940 placed	1632 Job melas & 5000 placements	4080 Job melas & 12,500 placements	8160 Job melas & 25,000 placements
13	8.5	8.5.2. Workforce Participation Ratio (WPR)	54.09			
14	8.5	8.5.3. Wages earned by male-femlae in regular / casual employment	Male: Rs.380/- Female: Rs.368/-			
15	8.5	8.5.6. Share of unemployed persons in population aged 15-24 (percentage)	9.3% (as per PLFS 2018-19)			
16	8.5	Equal average wage for men & women		265	313	407
17	8.5	No. of persons with disabilities provided wage employment	52835	63402	69742	73229
18	8.6	8.6.1 Youth Trained and employed under skilled development programme	14752	34240	40000	50000
19	8.6	8.6.2 Youth Trained Under Skill Development Programmes.	27,000	29,000	32,000	40,000
20	8.6	Total number of Youth trained under skill training and placement	MEPMA: 3175 GHMC: 837 Total: 4012	8,000	51,500	102,500
21	8.8	8.8.2. Number of migrant workers	396660			
22	8.8	8.8.3. Number of accidents in workplace	64			
23	8.8	8.8.4 Employment generated under MGNREGA – Person days generated	107,204,910	180,000,000	200,000,000	240,000,000
24	8.9	8.9.1 No. of tourists visited (Domestic)	830	839	923	1015
25	8.9	8.9.1 No. of tourists visited (Foreign)	3.23	3.56	3.91	4.30
26	8.9	8.9.2 Tourism sector Contribution to total GSDP and its growth rate	1.30%			

Sl. No	Target	State Indicator (SIF)	Achievement 2019-20	Target 2022-23	Target for 2025-26	Target 2030-31
27	8.3 and 8.8	No. of workers covered under Employees State Insurance (ESI) Act	1871859			
28	8.10	8.10.3 Total banking outlets	5636			
29	8.10	8.10.4 Number of ATMs	9041			
31		Employment in formal sector (%)	33.99			
32		Employment in informal sector(%)	66.01			
35	8.4	8.4.1. Renewable energy share in the total final energy mix	10.5			
36		GSDP - Agriculture Sector Growth (at Constant Price) (%)	Agri & Allied:14.3% Primary Sector:10.7%			
37		GSDP - Manufacturing Sector	Manufacturing: 1.6% Secondary sector:9.6%			
38		GSDP - Tertiary sector Growth (at Constant Price) (%)	9.60%			
39		GSDP - Total Growth Rate (at Constant Price) (%)	8.20%			
40		No. of IT hubs started	10			
41		No. of MSME Units registered	49677			
42		Per Capita Income (at Current Prices) (Rs.)	2,28,216/-			
43		Percentage Of Workforce in Agriculture and its allied sector	55.50%			
44		Youth skilled and placed (%)	6,000	6,500	7,200	8,700
46		No. of persons with disabilities provided wage employment	115069	138083	151891	159486

Source: State indicator framework.

ANNEXURE 8.1

COVID19 IMPACT ON ECONOMY

Telangana has been on higher growth path registering growth rates in the range of 8-10% pa since its formation. All through, the state's growth rate was higher than the all-India GDP. The Services sector of the state accounts almost two thirds of the state income and maintained a steady growth rate of around 10% pa. On the other-hand the share of Industry sector in state economy declined from 26% in 2015-16 to about 22% in 2019-20 and its growth exhibited a volatile trend. Agriculture sectors, as in any other state is highly volatile, but has averaged a growth rate of nearly 10% pa during the last four years. Both the level of Per Capita NSDP and its annual growth rate ranked high (2 and 3 respectively) among the 21 major states during the last three years. This would suggest that the even with business-as-usual approach, the state has potential to remain in the top.

Given its sound performance, the state can be assumed to be on a comfortable growth path with bright prospects during the next decade. However, the COVID 19 pandemic caused an unprecedented dislocation in the entire state economy and affected

lives of millions. Any projection of the state's growth should therefore take into account the impact of the pandemic on the economy. The assessment of impact of COVID 19 on the state economy is made in three steps. First, following the recent growth path state income is projected to 2020-21, which is what the state would have achieved had there been no pandemic (pre-pandemic scenario). Second, an assessment is made of the losses that the projected incomes of 2020-21 likely to suffer in the wake of restricted *economic activities* due to lockdown imposed to contain the pandemic. Third the estimated pre-pandemic income is adjusted for the assessed loss for each sector and projected as the post pandemic income. The revised income levels of 2020-21 can form the better basis for the projections for goal 8 of SDGs targets.

Pre-Pandemic Scenario

In pre-pandemic scenario the state income for 2020-21 is projected using the average growth rates of last four year (2016-17 to 2019-20) for each sector. The following table presents the estimates.

Table 8.1.1 Pre-pandemic Scenario

Sector	Pre-pandemic Scenario (Rs. Crores)		
	2019-20	2020-21	Four Year Average Growth
Agriculture, Livestock, Forestry and Fishing	135109	148924	10.23
Mining and Quarrying	27275	29110	6.73
Manufacturing	92505	96829	4.67
Electricity, Gas, Water supply and Other Utility, Services	14321	14880	3.90
Construction	35229	36005	2.20
Trade, hotels, transport, communication and services related to broadcasting	201020	222503	10.69
Financial, real estate & professional services	244807	266362	8.81
Public administration, defence and Other Services	124231	138398	11.40
Total GSVA at Basic Prices	874497	953011	8.98
Gross State Domestic Product	969605	1059907	9.31

The next task is to assess the loss in the projected income for 2020-21 by taking in to account the loss

of economic activities/loss in capacity utilisation in each sector.

Post Pandemic Scenario

Before describing the assessment of the possible loss of income during 2020-21, it is useful to understand the intensity and extent of pandemic spread in the state. With the outbreak of COVID 19 in early 2020, India faced an unprecedented crisis in almost every facet of its society. Initially the infection was confined to few metro-cities and few states but soon it spread fast to cities and other states engulfing entire India. The rate of spread increased from less than one hundred per day in first week March to over one thousand per day by early April. All states together started reporting almost ten thousand per day by mid-May. The daily cases crossed a peak of about 2 lakhs by mid – September (Figure 8.1.1). India was one of the countries to react to the outbreak by several mitigating and preventive measures. While the health infrastructure was ramped up for impending outbreak, the state also promoted

maintaining social *distance* and *personal hygiene* in a big way. A complete lockdown for 21 days was imposed in the entire country on 25th March to arrest the spread of pandemic. The lockdown restricted nearly all economic activities across the country. The lockdown period was later extended up to 31st May. Thereafter in series of *unlocks*, the Government relaxed the restrictions gradually permitting the activities to limp back.

The State of Telangana was No Exception

Beginning with sporadic infections during March, the state witnessed an exponential raise in the infections. Also the infection spread from the cities to rural areas taking the spread of COVID 19 to new level. The daily reported cases crossed 1000 in July and within a month it crossed 2000 and continued relentless till mid- September, when a slow-down in the rate of spread was visible (Figure 8.1.2). The total infected cases reached a peak of about two and half lakhs by mid- November.

Figure 8.1.1 Trends in COVID Infections India

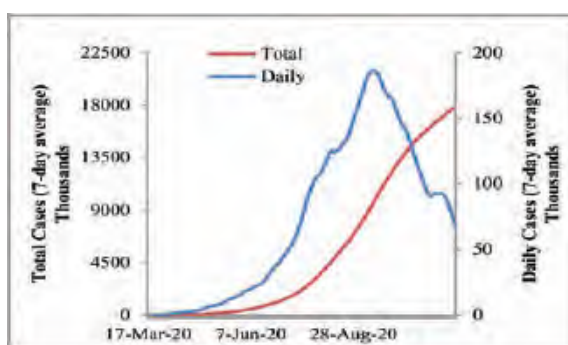
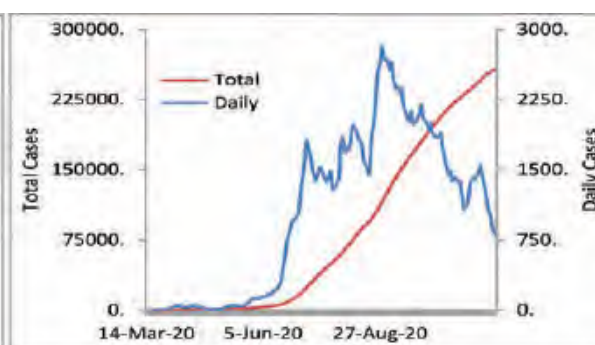


Figure 8.1.2 Trends in COVID Infections Telangana



The state of TS imposed a lockdown on 22nd of March, before the Government of India. All the economic activities in the state were under lockdown period for over two months. Even after staggered lifting of the lockdown, the activity levels had not returned to normal levels. The question is what would be the impact on state economy in 2020-21 due to the lockdown?

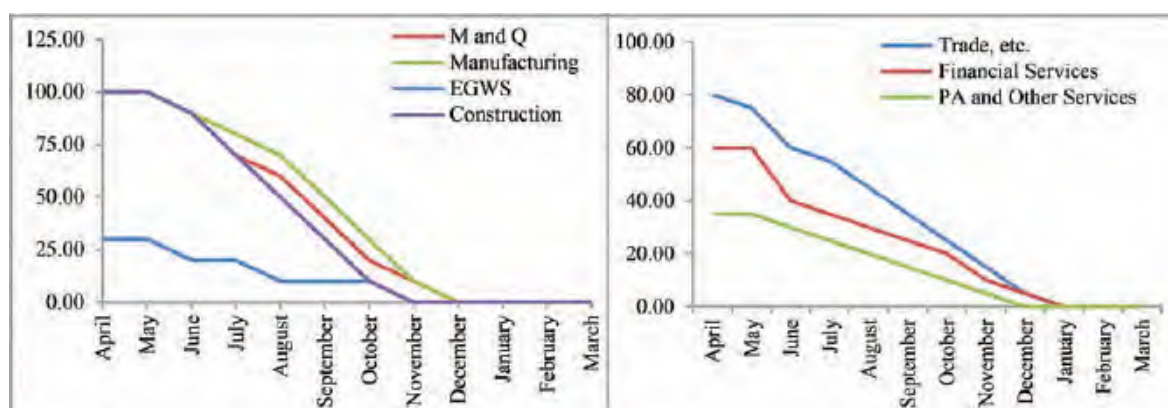
For this the state income is disaggregated into 8 sectors, viz., 1) Agriculture, forestry & fishing, 2) Mining & quarrying, 3) Manufacturing, 4) Electricity, gas, water supply & other utility services, 5) Construction, 6) Trade, hotels,

transport, communication and services related to broadcasting, 7) Financial, real estate & professional services and 8) Public administration, defence and Other Services. An assessment of direct loss in each sector is made by examining the extent by which the activities under the sector which were affected by the lockdown and partial relaxations. As the unlock process was staggered overtime, the assessment of loss is made for each month of the fiscal year 2020-21. For example, Agriculture sector consists of Crops and horticulture, fishery, livestock and forestry. Crop and horticulture activities may not have suffered any loss during the lockdown periods. But, Fishery, livestock, and

forestry may have had loss to the extent of 10-5%. On the whole agriculture sector may have lost 6% during April-May and completely recovered by end of November.

Similarly, Industry sector, Mining and quarrying and manufacturing and construction activities are assumed to have lost 100% for the first two

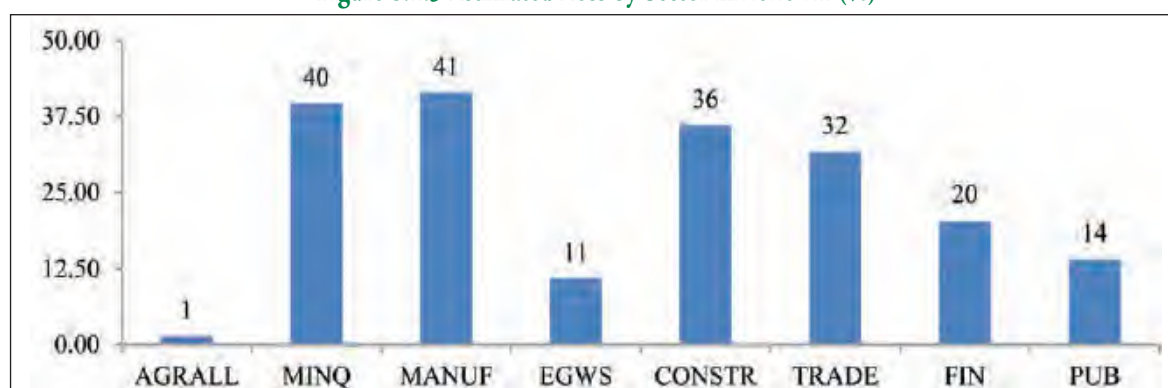
months and gradually returned to full capacity only by November/December. In service sector, loss for activities under trade and hotels is pegged at about 80% to begin with and gradually reduced zero by January. Loss for the activities of Public Administration and other services is assumed to be less the 40% with sharp decline to zero by the end of December.



The overall loss for the any sector in year would be the weighted average of monthly losses assessed as above with monthly Income shares as weights. The sector-wise monthly income shares were computed by estimating the production shares by four quarters of the year and allocating them within each quarter uniformly. As the there are no state estimates of quarterly incomes, the state production activities are assumed to be distributed as per the quarterly

estimates of national GDP. Treating the total production from a sector as 100, it is distributed to four quarters as per the national quarterly GDP of that sector. Within each quarter the production allocated to each month uniformly. Finally, the overall annual loss for each sector is estimated as a weighted average of monthly loss using monthly distribution of production as weights.

Figure 8.1.3 Estimated Loss by Sector in 2020-21 (%)



The annual loss estimates are applied on the pre-pandemic income estimates for 2020-21 to arrive at estimate Post-pandemic income. The following table presents the results of the overall assessment of loss and possible contraction in the state income.

The GSDP of TS is likely to contract by 17% in the year 2020-21. All the sectors, except agriculture show contraction in the pandemic year. Mining and Quarrying (40%), Manufacturing (41%) and construction (36%) sectors suffered the most.

Overall the Industry sector (Mining and quarrying, Manufacturing, electricity, gas and water supply and construction) is estimated to contract by 36% while service sector (Trade, etc., Financial and real estate, etc., Public Administration, etc.,) by 23%. It may be noted that though the service sector contraction is 23%, its share in total contraction of the state income is 67%.

Post Pandemic Projections for 2020-21

The GVA for each sector in post pandemic scenario is arrived at by adjusting the sectoral pre-pandemic GVA for the estimated losses due to lockdown.

Overall, the state income likely to contract by 15%. Agriculture is the only sector that can register a positive and high growth rate of 8.4%. The three sectors that are most affected are Mining and Quarrying (-35%), Manufacturing (38%) and Construction (35%). Overall, the state income is likely to shrink by 15%. Negative growth rate in state income did occur in 1980s and 1990s, but mostly driven by negative growth in agriculture sector due to adverse seasonal conditions. This for the first time that the contraction in state income is due to the contraction in non-agricultural sectors.

Table 8.1.2 Pre and Post Pandemic Situation

Sector	Pre-pandemic Situation (Rs. Crores at 2019-20 Prices)			Post- Pandemic Situation (Rs. Crores at 2019-20 Prices)		
	2019-20	2020-21	Assumed Growth	Assumed Loss	2020-21	Growth Rate (2019-21)
Agriculture, Livestock, Forestry and Fishing	135109	148620	10.0	1	146504	8.4
Mining and Quarrying	27275	29184	7.0	40	17634	-35.3
Manufacturing	92505	97130	5.0	41	56932	-38.5
Electricity, Gas, Water supply and Other Utility, Services	14321	14894	4.0	11	13265	-7.4
Construction	35229	35934	2.0	36	22976	-34.8
Trade, hotels, transport, communication and services related to broadcasting	201020	223132	11.0	32	152456	-24.2
Financial, real estate & professional services	244807	266840	9.0	20	212552	-13.2
Public administration, defence and Other Services	124231	137896	11.0	14	118485	-4.6
Total GSVA at Basic Prices	874497	953630	9.0	22	740806	-15.3
Gross State Domestic Product	969605	1059907	9.3	22	821554	-15.3

Implication of this contraction in the economy can manifest in several direct and indirect ways. Firstly, this contraction is likely to take a heavy toll on fiscal capacity. This may pose a difficult task to maintain the levels of investments in welfare of the people at the same time meeting committed expenditures. Second the State income as measured by GVA is not that income that necessarily accrues to people. However, the standard of living and purchasing power of people does depend on the size and growth of the economy. The unprecedented contraction in

the economy coupled with the effects of lockdown is therefore likely to dampen all the progress in the human development in that the state achieved so far. Third the contraction in the economic activities in the state during this period may have taken a heavy toll on employment. Restoring the size of employment and making further progress depends on how fast the state can recover from the pandemic shock and get back to its original growth path.

Sustainable Development Goal - 9

Industry: Innovate, Incubate & Incorporate



Vision

Vision for industrialisation of Telangana State is Research to Innovation; Innovation to Industry; Industry to Prosperity. The Industrial Policy framework of the state is driven by the slogan – Innovate, Incubate, Incorporate

Achievements

- According to SDG India Index Report, 2019-20, Telangana State is in the league of top Performers with a score of 82
- Telangana State retained its position in the top three States for the year 2019 with regard to Ease of Doing Business
- Telangana State Industrial Project Approval and Self-Certification System (TS-iPASS) Act, 2014 is a unique and innovative system which is being replicated in other states. TS-iPASS aims at speedy processing of applications for issuing various clearances that are essential for setting up of industries at a single point based on the provision of self-certificate by the entrepreneur
- Since 2014, around 13400 MSMEs are registered under TS-iPASS with an investment of Rs 18465 crores and creation of 243556 jobs, around 890 large firms generating 1214462 jobs with an investment of Rs 188881 crores
- The road assets are to the tune of 24425 kms of road length, out of which State Highways have a road length of 3152 kms, Major District Roads are to the tune of 12079 kms, while Other District Roads comprise a length of 9014 kms
- Secondary sector grew at an average annual growth rate of 5.3 percent in 2019-20 vis-à-

vis 2.5 percent at the all-India level. Number of registered units in 2015 was 1241 with an employment potential of 61969 people. This number increased to 14268 in 2020 and provided employment to nearly 15 lakh people

- Key industries in Telangana are Pharmaceuticals, Textiles, Food Processing, Leather, and Electronics
- There are 34802 micro units, 3114 small units and 624 medium units. Hyderabad, Medchal-Malkajigiri and Rangareddy districts have higher number of micro and small enterprises in that order while Rangareddy stands next to Hyderabad in terms of small enterprises
- In 2019-20, the total value of IT Exports accounted for Rs.1,28,807 crores with an employment of 5,82,126 professionals.
- Telangana State has undertaken initiatives like SoftNet and IT clusters to enhance the performance of IT industry, TASK for providing skills, T-Hub and WE-Hub to promote entrepreneurship

Challenges

Growth of manufacturing sector has remained stagnant and the major challenge is to make the manufacturing sector more vibrant. For the manufacturing sector to grow at the desired pace, it is important on the part of the state government to create and provide the necessary infrastructure. Innovation is another area which requires major attention. An increase in the budget towards scientific innovation will go a long way in improving the industry. Given the pandemic, yet another challenge is to protect the micro, small and medium enterprises and make them sustainable.

9.1 The Context

Building Infrastructure

The Sustainable Development Goal 9 focuses on on 'Build resilient infrastructure, promote sustainable industrialisation and foster innovation'.

Sustained investment both in infrastructure and investment are fundamental drivers for economic growth and development. Renewable energy and mass transport along with new industries and information and communication technologies are becoming more important as majority of the population lives in cities. Sustainable development can happen through promotion of industries and investment in scientific research and innovation. Additionally, technological progress helps in finding long lasting solutions to economic and environmental challenges in the form of providing new jobs and promotion of energy efficiency (Sustainable Development Goals Fund).

According to United Nations Development Programme (UNDP), worldwide 2.3 billion people lack access to basic sanitation; infrastructure constraints cut businesses productivity by nearly 40 percent. 2.6 billion people in developing countries do not have access to constant electricity. More than 4 billion people still do not have access to the internet, 90 percent of them are in the developing countries. The renewable energy sectors currently employ more than 2.3 million people and the number could reach 20 million by 2030. In developing countries, barely 30 percent of agricultural produce undergo industrial processing compared to 98 percent in high-income countries.

Between 2008 and 2018, share of manufacturing value added increased by 1.4 percentage points. In Least Developed Countries (LDCs), percentage of manufacturing in GDP increased but it has not grown at a rate required to double the manufacturing share in GDP by 2030. Only 31.5 percent of small-scale industries globally access credit and it varies from 20.7 percent in Sub-Saharan Africa to over 50 percent in Latin America. Globally, though there is a growth in

medium and high-tech industries, it has been uneven in Sub-Saharan Africa. This disparity exists due to the differences in spending on research and development (NITI Aayog, 2019).

Growth of medium and high technology industries has been uneven across the globe. In this regard, Sub-Saharan Africa lagged behind while the rest of the world experienced high growth. There are also wide inequalities in investment on research and development in different countries. If the targets of SDG 9 are to be achieved, such inequalities in terms of access and availability of services need to be addressed. Further, innovation in ecosystem, increase in public investment and skilling are important to achieve the targets.

India implemented the Goods and Services Tax (GST), Foreign Direct Investment (FDI) regime liberalisation, Ease of Doing Business Reforms and Introduction of the Insolvency and Bankruptcy Code to promote investment, activate manufacturing and foster innovation. There is also emphasis on digital revolution, internet penetration and financial inclusion. Various flagship programmes like Make in India, Start-up India, Skill India have been initiated to supplement the collective growth. Considerable progress took place in infrastructure. Construction of National Highways/roads increased from 4410 km in 2014-15 to 10824 km in 2018-19. Cargo handling capacity in twelve major ports grew by 84 percent in 2018-19 as compared to 2014-15. India's industrial corridor spread across six states is the world's largest and would act as an industrial hub for trade and commerce. India's internet user base crossed 500 million. Implementation of State level Business Reform Action Plan resulted in the jump of rank in the World Bank's Ease of Doing Business Ranking by 79 places in 2019 (SDG India Index Report, 2019). In India, seventy percent of habitations are connected by all-weather roads, for every 100 persons 40 are internet subscribers and 88 have mobile connections, 12.13 percent of the labour force is employed in the manufacturing sector.

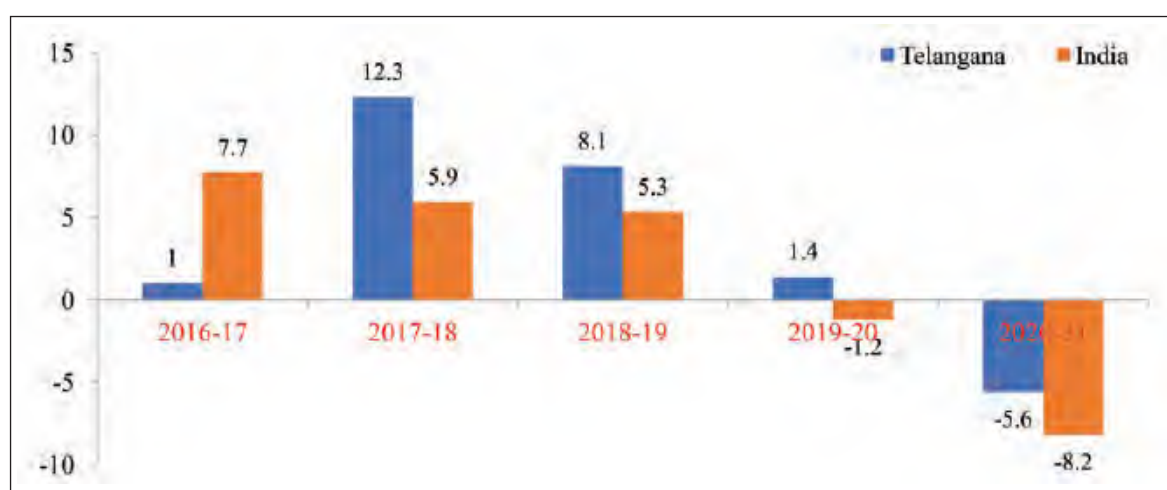
Based on SDG India Index Report 2020-21, the SDG Index for Goal 9 ranges between 24 and 72 for States and between 23 and 66 for Union Territories. Telangana falls under the league of Performers with an index score of 59 while the All-India Index Score is 55.

According to SDG India Index Report 2020-21, in global innovation index, India improved its

rank from 57 in 2018 to 48 in 2020. Ninetyeight percent of the targeted habitations are covered with all-weather roads under Pradhan Mantri Gram Sadak Yojana (PMGSY), 16.1 percent of total gross value added is from the manufacturing sector, 12.07 percent of total workforce is employed in the manufacturing sector, for every 100 persons 84 have a mobile connections and for every 100 persons 55 have internet subscription.

Growth of Industries in Telangana and India (2016-17 to 2020-21)

Figure 9.1 GVA of industries Telangana and India, 2016-17 to 2020-21 (Constant Prices)



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

Contribution of industry in Telangana in terms of Gross Value Added (GVA) at constant prices shows that the growth of GVA was highest in Telangana during 2017-18 and was higher 6 percentage points than as compared to India in the same year. Except 2016-17, in the remaining years from 2017-18 to 2019-20, growth of GVA of industry is higher in Telangana vis-à-vis India. During the

pandemic year 2019-20 while India registered negative growth rate of GVA, growth of (-1.2), GVA in Telangana was 1.4 percent (figure 9.1). Between 2020-21 and 2021-22, the GVA of the industrial sector increased by 20.23 percent.

The target dimensions of SDG goal 9 are as follows:

Table 9.1 SDG 9 – Targets and Indicators

Target	Target dimension
9.1	develop quality, reliable, sustainable and resilient infrastructure, including regional and trans- border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
9.2	Promote inclusive and sustainable industrialisation and by 2030 significantly raise industry's share of employment and gross domestic product in line with national circumstances and double its share in least developed countries
9.3	Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

Target	Target dimension
9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
9.5	enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
9.a	Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States
9.b	Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities
9.c	Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020

Source : UNDP

SDG index for SDG 9 ranges between 8 and 88 for the states and ranges between 0 to 100 for the Union Territories. Telangana with a score of 82 is in the league of Performers (Niti Aayog, 2019-20).

SDG 9 – Focus on Empowerment of the Poor

In the pursuit of targeting economic growth coupled with infrastructure development and industrialisation, the state government focuses on social inclusion and empowerment of poor. Accordingly, the Vision for industrialisation of Telangana State is Research to Innovation; Innovation to Industry; Industry to Prosperity. The Industrial Policy framework of the state is driven by the slogan – Innovate, Incubate, Incorporate.

The main objective of the policy is to facilitate a business regulatory environment where doing business would be a simple and easy process sans any complex administrative hassles. Both innovation and technology would drive the growth of industrialisation. Telangana encourages large scale private participation in industrial growth while confining its government's role to that of a facilitator and a catalyst. The government is committed to provide hassle free environment to encourage local, domestic and international investors to set up industries in the state (Socio-economic Outlook, 2020).

Industrialisation is the most significant approach to be followed by Telangana to achieve economic growth and development. Policy initiatives of the state orient towards creation of employment among the youth, creation and development of infrastructure, developing the backward areas, optimum utilisation of resources to enhance growth opportunities and to impart skill training programmes to the youth. The state wants to enable them to enter the labour market with lucrative salaries, innovation and investment on research and development.

Connecting villages and far-flung areas with all-weather roads will have an affirmative effect and will lower the overall logistics related costs and decrease environmental impact.

Telangana State, the youngest in the country, has secured first rank in Ease of Doing Business-2016 as declared by Ministry of Commerce, Government of India. As part of Ease of Doing Business initiatives, the Government has launched 113 online services across 22 Government departments, introduced reforms and simplified procedures. It is apt to say that Telangana is the only State in the country that has accorded the investor a legal right to get industrial clearance, provided all compliances are in order.

9.2 SDG 9 – Targets and Indicators

SDG 9 consists of five goals and two means of implementation. The target dimensions include building resilient infrastructure, promotion of inclusive and sustainable industrialisation, access of small scale and other industrial enterprises to financial services, adoption of clean and environmentally sound technologies and industrial processes, encourage innovation and increase research and development.

Target 9.1: *develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all*

Investments in infrastructure for transport, irrigation, energy and information and communication technology are essential in achieving sustainable development and empowering

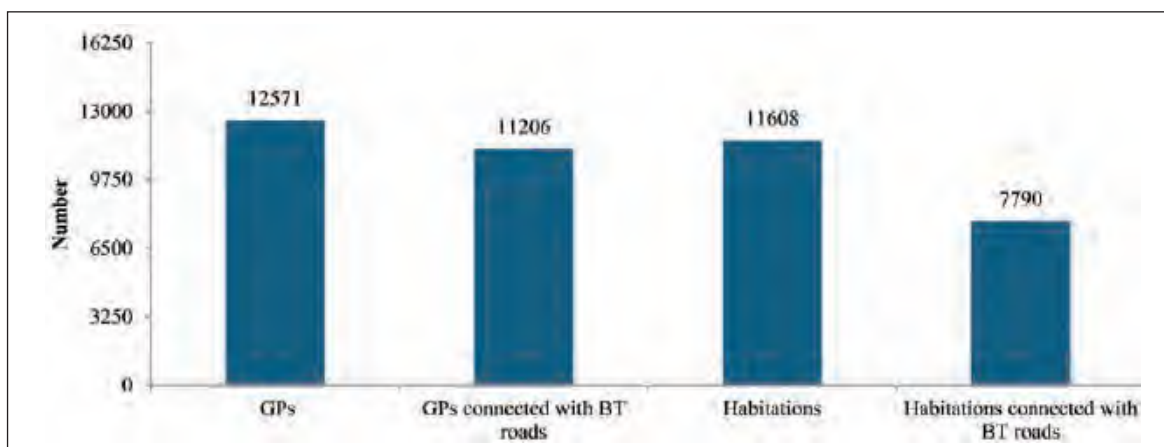
communities. In this regard, construction of roads both in rural and urban areas, establishment of railways and airways becomes highly essential.

For land-locked Telangana, land transportation infrastructure is vital to spatially connect the resources across the state. Telangana has a total road network of 1,07,871 km of which 67,276 km are rural roads, 3,910 km are National Highways, 9,013 km are GHMC roads, and the remaining 27,672 km are state highways and district roads (Telangana Socioeconomic Outlook, 2022).

Rural Road Network

The objective of Panchayat Raj Engineering Department (PRED) of the state is to plan, design, execute and maintain required infrastructure facilities in rural areas and also provide assistance to local bodies for construction and maintenance of rural roads, village internal roads, construction of public institution buildings.

Figure 9.2 Number of Gram Panchayats and Habitations connected with Bituminous (BT) Roads (2019-20)



Source: Panchayat and Rural Development Department, Govt. of Telangana

Table 9.2 Road Assets in PRED as on 01.04.2020

Type of road surface	Road length (km)	Percentage
Cement Concrete	3654	5.40
Bituminous	22605	33.41
WBM	10035	14.83
Gravel & Earthen roads	31370	46.36
TOTAL	67664	100

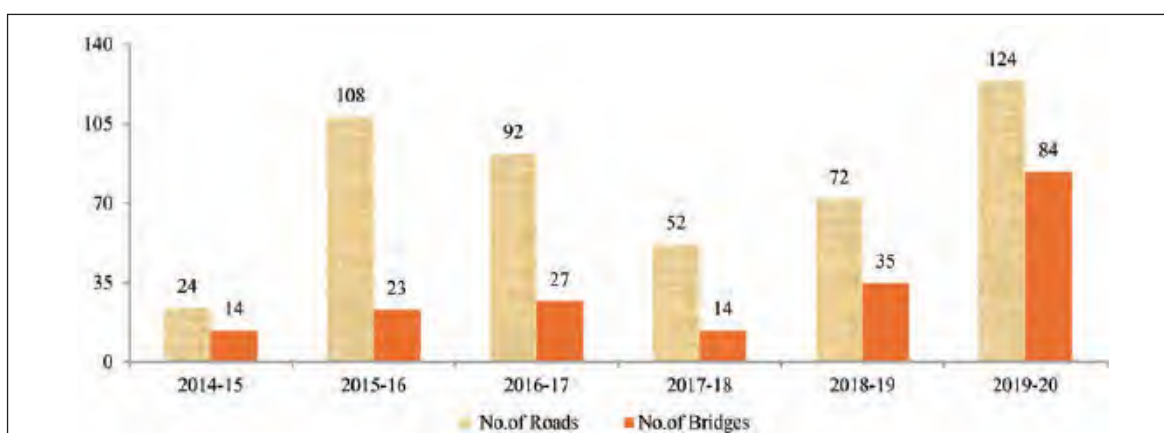
Source: Panchayat and Rural Development Department, Govt. of Telangana

Rural road network is undertaken by PRED under the schemes Pradhan Mantri Gram Sadak Yojana (PMGSY) and National Bank for Agriculture and Rural Development Rural Infrastructure Development Fund (NABARD RIDF).

Pradhan Mantri Gram Sadak Yojana (PMGSY)

PMGSY achievements in Telangana State - number of roads constructed in rural areas increased to 124 in 2019-20 as compared to 24 in 2014-15, likewise the number of bridge constructions increased from 14 in 2014-15 to 84 in 2019-20 (Figure 9.3).

Figure 9.3 Number of Roads and Bridges constructed in Telangana State (2014-15 to 2019-20)



Source: Panchayat and Rural Development Department, Govt. of Telangana

The construction of roads in rural areas is drawn from the Centrally Sponsored Scheme Pradhan Mantri Gram Sadak Yojana which was launched at the national level in December 2000 to provide all-weather connectivity to unconnected habitations. The scheme aims at providing single all-weather road connectivity to all habitations having population (based on 2001 Census) of more than 500 in plain areas, more than 250 in Integrated Action Plan (IAP) districts, i.e., erstwhile Adilabad, Karimnagar, Khammam and Warangal districts.

Under Phase I, during 2000-2018, out of 2924 roads sanctioned, the State completed 2859 roads and out of 284 bridges sanctioned, the State completed 263 bridges. The State also completed road length of 9728.74 kms out of the total sanctioned length of 10192 kms during 2000-2018.

Under Phase II of PMGSY, the emphasis is on consolidation of the existing rural road network to improve its overall efficiency to provide transportation services for people, goods and services. The main aim is to cover upgradation of

prevailing selected rural roads on the basis of their economic potential and their role in enabling the growth of rural market centres and rural hubs. Growth centre is defined as an area which provides rural socio-economic services both in the specified area and also a catchment area with a radius of several kilometres. Rural Hub is defined as a large growth centre and is connected by more than one route.

Out of the 114 roads sanctioned with a length of 944 kms in 2013-14, the State completed 113 roads with a length of 894.54 kms. Out of 17 bridges sanctioned, the State completed 16 bridges. Under Phase III, PMGSY visualizes consolidation of the existing rural road network by upgrading the existing through routes and also major rural links so as to connect them to Agriculture and Rural Markets (GrAMs); Higher Secondary Schools, Hospitals and Administrative Centres like mandal headquarters, banks and petrol bunk. PMGSY III is targeted to be completed by March 2025. In Phase III the sharing of funds is in the ratio of 60:40 (central: state) and is allocated a road length of 2427 km.

National Bank for Agriculture and Rural Development (NABARD) Rural Infrastructure Development Fund (RIDF)

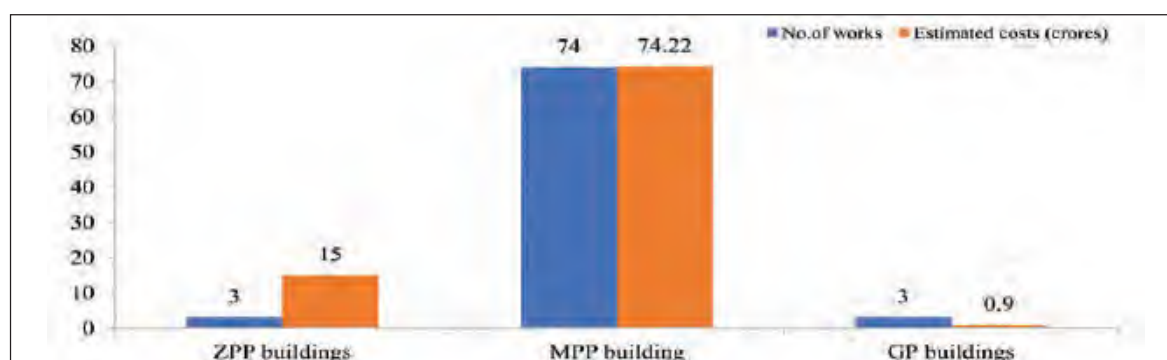
The total achievements under NABARD RIDF during 2014-15 to 2019-20 are 213 kms of rural roads and 326 bridges at an estimated cost of Rs. 496 crores. For the year 2020-2021, the spill over programme under RIDF is 69 bridges at an estimated cost of Rs 100 crores.

With regard to construction of rural roads, construction and up gradation are taken up to BT/CC to provide all-weather road connectivity to rural habitations. During 2014-15 to 2019-20,

5642 km of roads were laid at an estimated cost of Rs. 2418 crores.

For maintenance of rural roads, for BT road renewals and special repairs of roads an amount of Rs 2132 crores was sanctioned for an estimated length of 13603 kms during 2014-15 to 2019-20. The achievements during this period are 12675 kms with an expenditure of Rs. 1693 crores. In case of construction of public institution buildings in rural areas, for the period 2014-15 to 2019-20, while the sanction was for 114 buildings, 77 are completed and out of the sanctioned amount of Rs. 104 crores, expenditure of Rs 51 crores is incurred.

Figure 9.4 Number of Buildings and Estimated Cost (2014-15 to 2019-20)



Source: Panchayat and Rural Development Department, Govt. of Telangana

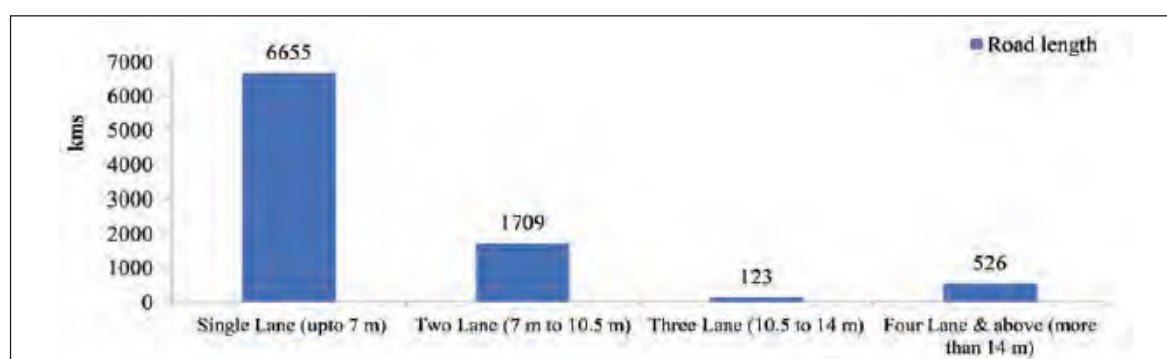
Out of 13 sanctioned district buildings at an estimated cost of Rs. 9.40 crores, six are completed at an estimated cost of Rs. 2.85 crores.

Urban Road Network

Greater Hyderabad Municipal Corporation

(GHMC) caters to urban road network in Hyderabad and Secunderabad. The total length of roads maintained by GHMC is 9013 Kms. Out of this length 2846 Kms are BT Roads and 6167 Kms are Cement Concrete (CC) Roads.

Figure 9.5 Lane Wise Break Up of Roads under GHMC (2014-15 to 2019-20)



Source: GHMC, Govt. of Telangana

During 2019-20, 4154 Road works sanctioned for an amount of Rs. 1013.30 Cr. and out of this 1242 works costing Rs. 267.42 crores are completed and balance 2912 works costing Rs. 745.89 crore are at various stages of execution. For 2020-21, 4154 road works sanctioned for an amount of Rs. 1013.30 crore and out of this 1242 works costing Rs. 267.42 crore are completed and balance 2912 works costing Rs. 745.89 crore are at various stages of execution.

Comprehensive Road Maintenance Programme (CRMP)

Government has sanctioned an amount of Rs. 1839.00 crore under Comprehensive Road Maintenance Programme for maintenance of 709.49 km main roads (3 lane and above width) covering total GHMC area with a total of 401 stretches under 7 packages for 5 years with the agencies given the responsibility of overall upkeep and maintenance of all the road stretches in traffic worthy condition

In the first year of contract so far, a total length of 320 km is re-carpeted along with maintenance of footpaths, central median, painting to kerbs, lane marking, regular sweeping and greenery maintenance. The expenditure incurred till date is Rs. 350.00 Cr. The agencies have established

control rooms to attend the complaints from citizens in the respective zones.

Footpaths

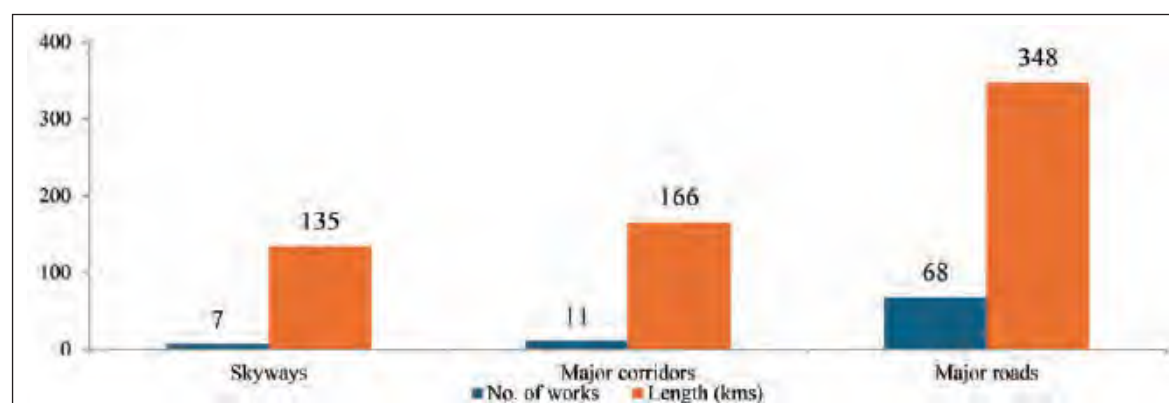
The existing length of footpath during the year 2014-2015 was 452 Kms. Special focus is given for widening and construction of new footpaths keeping in view of pedestrian safety, works were taken up wherever sufficient width is available and the length of the footpath is increased to 715 Km by the year 2019.

In the year 2020, 70 new footpath works sanctioned for an amount of Rs. 32.95 Cr. with a length of 76 Km and out of this 33 works costing Rs. 13.81 Cr for a length of 32.81 Km are completed and balance 37 works costing Rs. 19.14 Cr are at various stages of execution.

Strategic Road Development Plan (SRDP) Works

As part of improving the basic amenities in Hyderabad for safe driving and Traffic facilities, in minimizing the travel time, increasing average journey speed and in turn, reducing air pollution levels, Strategic Road Development Plan (SRDP) was formulated, with an estimated budget of Rs.25,000/- Crores.

Figure 9.6 Strategic Road Development Plan - GHMC



Source: GHMC

The widening of roads and acquisition of properties under different stretches is as below:

Table 9.3 Widening of Roads and Acquisition of Properties

Sl. No.	Name of the Project	Number of Roads	Number of Properties Acquired
1	General Road	30	1070
2	SRDP Phase-I	12	43
	SRDP Phase-II	4	112
3	R&B & National Highway	5	91
4	HMDA (Balanagar Flyover)	1	66
Total			1382

Source: GHMC

Balanagar flyover is a six-lane road being developed under SRDP with a length of 1.13 km at an estimated cost of Rs 3.87 crores. Administrative sanction for an amount of Rs.268.00 crores is granted for development of infrastructure facilities at Kokapet layout in an extent of 530 acres. The widening and strengthening of double lane to four-lane from NH-65 Beeramguda Kaman to Kistareddypet in Patancheru in Hyderabad district is also taken up. Additionally, two skywalks in Hyderabad are also proposed at an estimated cost of Rs. 76 crores.

Roads to Remote Areas

Telangana State endeavours to connect the remote habitations by constructing all weather roads. One such initiative is to connect remote habitations in the Scheduled areas and Integrated Tribal Development Agency (ITDA). During the last three years, out of 4798 unconnected habitations, 1682 ST habitations are connected with all-weather roads.

Railways in Telangana State

Telangana is witness to the best period of rail development in the last 5 years. This reflects in the increased capital investments which rose from average grant of Rs. 934 crore during 2014-18 to Rs. 1,813 crore in 2018-19. The rail network has expanded by 159 km of newlines and 48 km of doubling and tripling. This infrastructure thrust includes fast tracking of other works including capacity enhancement. To enhance safety, all the unmanned level crossing gates in the State

of Telangana are eliminated. The impetus to meet expectations of rail users is visible in the introduction of 48 new trains, making stations digitally enabled, implementing the concept of Swachh Rail – Swachh Bharat to optimise cleanliness at Railway stations and trains, enhancing standards of passenger facilities/amenities and ensuring stations become ‘Divyangjan’ friendly. Passenger Security is also a prime area of attention. The Railways is also committed to promotion of environmental sustainability by ensuring 100 percent LED lighting of all the railway stations in Telangana State.

Hyderabad Metro Rail Project

Hyderabad Metro Rail project has been implemented by Government of Telangana as a Mass Transit project to provide a solution to the increasing traffic congestion and reducing pollution levels in Hyderabad city. Covering three high density traffic corridors, the entire project has been successfully completed, but for a small stretch in the Old City. It is now operational in 69 kms and is the largest project in the world implemented in Public Private Partnership (PPP) mode. So far, an amount of Rs.19,307 crore has been spent on the project by the private sector Concessionaire M/s.L&T Metro Rail (Hyderabad) Ltd (including Rs.1,204 crore released by Government of India (GoI) under the Viability Gap Funding scheme). As the owner of the project, the State Government has spent Rs.2,730 crore so far. The daily ridership touched about 4.5 lakh passengers in the pre COVID period.

Future Action Plan

Detailed Project Report (DPR) for Metro Rail Phase-II has been submitted by HMRL to the Government, which is currently under examination. The Metro Phase-II project consists of 2 corridors plus a small bridging of Corridors I & III:

- i) BHEL to Lakdikapul with extension of Corridor-I from Miyapur to Mythri Nagar (26 km); and Bridging of Corridors I & III from Nagole to LB Nagar (5 km);
- ii) Airport Express Metro Line from Raidurg to Rajiv Gandhi International Airport (31 km).

Aviation Industry

Telangana State has undertaken various initiatives to develop the aviation industry of the state. For the overall growth of the aviation industry, the state government has initiated a Greenfield airport in Kothagudem, revive Warangal airport, heli-taxi service in Hyderabad and a National Aviation University in Begumpet. Revival of Warangal airport would give a boost to Mega Textile Park in Warangal and also the IT hub launched in the city. Kothagudem airport would provide connectivity to the coal belts, mines and power ecosystem around

Khammam district. The state government also proposes to develop other airstrips at Dundigul, Hakimpet, Nadirgul and Ramagundam to strengthen cargo movement.

Target 9.2: Promote inclusive and sustainable industrialisation and by 2030 significantly raise industry's share of employment and gross domestic product in line with national circumstances and double its share in least developed countries

This target focuses on promotion of inclusive and sustainable industrialisation and aims to increase share of employment in industry and also increase gross domestic product. Performance of industry in Telangana is presented in detail here.

In Telangana State, secondary sector grew at an average annual growth rate of 5.3 percent in 2019-20 vis-à-vis 2.5 percent at the all India level. Number of registered units in 2015 was 1241 with an employment potential of 61969 people. This number increased to 14268 in 2020 and provided employment to nearly 15 lakh people. Sector wise data shows that number of units is high in food processing industry followed pharmaceuticals and chemical industry (See annexure 9.1).

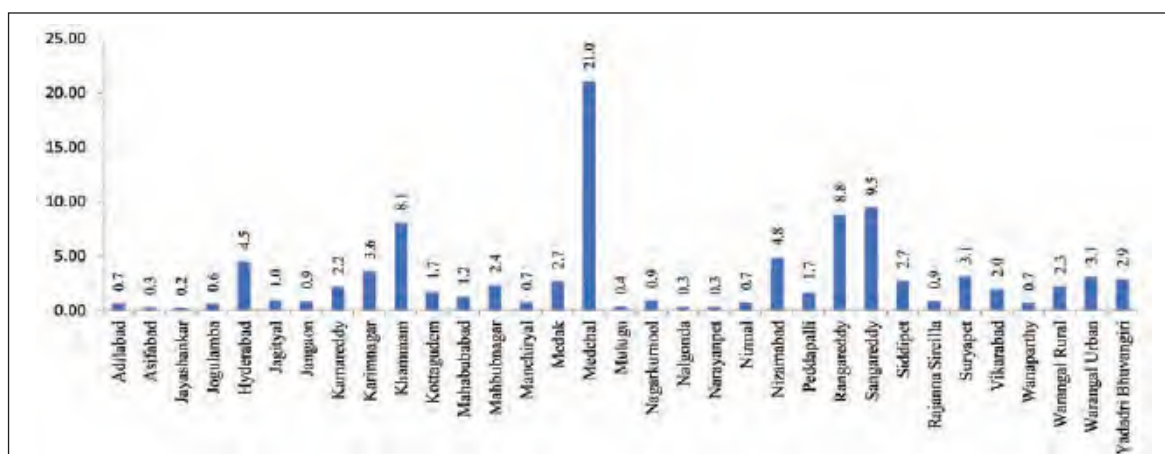
Table 9.4 Number of Registered Units, Investment, Employment (2015-2020)

Jan-December	Number of Units	Investment (Crore)	Employment
2015	1241	22051.7	61969
2016	1550	26170.8	108258
2017	2768	66653.9	207589
2018	2780	39747.8	663365
2019	2924	22056.8	238066
2020	3005	30667.8	178771
Total	14268	207348.8	1458018

Source: Department of Industries, Govt. of Telangana

Around 9020 industries in the organised sector commenced operations with an investment of Rs 85040 crores providing employment to around 6 lakh population. Nearly 760 are in advanced

stage and 751 are in initial stage of production activities (Annual Report, 2019-20, Department of Industry, Govt. of Telangana).

Figure 9.7 Share of Registered Units in Districts of Telangana State (2020)

Source: Department of Industries, Govt. of Telangana

Medhchal-Malkajigiri has the highest share of registered units in Telangana during 2016- 2020.

Telangana State has 69 Public Sector Undertakings (PSU) and out of these 69, 43 are working PSUs, four under demerger and the remaining 22 are non-working PSUs according to Comptroller and Auditor General Report, 2017.

Key Industries in Telangana

Telangana is front runner in the pharmaceutical industry, in order to further strengthen this industry, the Life Sciences Policy is implemented which concentrates on the growth of pharmaceuticals, bio-technology, medical devices, bio-services and nutraceuticals. Hyderabad Pharma City established under this policy is the largest in the world with an investment potential of Rs. 64000 crores and employment potential of nearly 4 lakh people. Medical Devices Park in Sangareddy has an employment potential of 5000 persons. Genome Valley is established in 300 acres with ready to use lab spaces.

The Handloom and Power loom sector is an important sector both in terms of employment and economic contribution in rural areas and the government supports it by giving budgetary support and making interventions. Nethannaku Cheyutha (Thrift Fund Scheme) is one such scheme for handloom weavers in which the weaver contributes 8 percent of the wage and the

state government contributes equal amount. This Scheme is extended to both the co-operative and outside cooperative field and also other ancillary workers. Chenetha Mitra is another scheme which provides 40 percent subsidy on yarn, dyes and chemical requirements of the weavers. Telangana State is also known for its production of high quality long staple cotton fibre with an annual production of 60 lakh bales. In order to harness this potential, the state government has initiated the Telangana Textile and Apparel Policy (T-TAP).

Kakatiya Mega Textile Park at Warangal is equipped with the State-of-the-art manufacturing facilities for ginning, spinning, textile processing etc. to provide employment to the weavers. Government has introduced loan-waiver scheme amounting to Rs 1 lakh to relieve individual weavers from indebtedness, to enable them to obtain fresh working capital from banks to earn their livelihood. Apparel and Weaving Parks are set up in Sircilla to promote textile industry. Revival of traditional weaves of Telangana and developing new weaves is undertaken by Telangana State Handloom Weavers Cooperative Society (TSHWCS). Telangana State Handloom Weavers Cooperative Society (TSCO) aims to revive the traditional weaves of Telangana.

In case of Food Processing Industry, Government proposed 16 food parks, seven cold chain projects, expansion of multiple food processing enterprises through the entry of major global and Indian

brands. The government also established a platform to provide market linkages for small farmers with big food processing and retail companies. Food processing park at Banda Timmapur, Medchal is in 100 acres of land and infrastructure works are completed, agro processing park at Banda Mailaram, Siddipet is dedicated to seed processing, another agro-processing park at Dandu Malakapur, Yadadri Bhuvanagiri is dedicated to agro-processing. Infrastructure works are completed in both these agro-processing parks.

Telangana State Leather Industry Corporation (TSLIPC) fulfils the demand for leather products/ footwear to government departments such as Social Welfare, Tribal Welfare departments, Telangana Minorities, BC Welfare, National Academy for Construction. Apart from this, TSLIPC conducts Govt. of India awareness programmes to Telangana SC/ST Hub. Around 3000 SC/ST beneficiaries were part of this awareness campaign in 2018-19.

Telangana State entered into a MoU with Central Leather Research Unit (CLRI), Chennai, for development of mini leather parks in Mahbubnagar, Mancheryal, Nalgonda, Nagarkurnool, Khammam and Karimnagar.

With regard to Electronics industry, Telangana has 250 companies and employs more than 50000 employees and accounts for 6 percent of electronics production at the national level. It houses both home grown and global companies. In 2016, The Telangana State Electronics Policy came into existence to strengthen the electronic manufacturing ecosystem. Two Electronic Manufacturing Companies are set up in Raviryala and Maheswaram.

On an average, around 22 lakh metric tonnes of sugar was crushed in 37014 hectares of land producing around 2.3 lakh metric tonnes of sugar during 2014-2020 (Table 9.5).

Table 9.5 Performance of the Sugar Industry in Telangana 2014 to 2020

Sl. No.	Crushing season	Area (Ha.)	Cane Crushed (Lakh MTs)	Sugar Production (Lakh MTs)	No. of Farmers	Cane Price Payment %
1	2014-15	48364	30.64	3.20	46380	100
2	2015-16	43121	25.56	2.76	36326	100
3	2016-17	29340	11.16	1.16	24289	100
4	2017-18	35400	24.83	2.68	31543	100
5	2018-19	39848	24.15	2.57	32572	100
6	2019-20	26013	13.62	1.38	23017	97
Average of Six years		37014	21.65	2.29	32355	99.5

Source: Department of Industries, Govt. of Telangana

Plastic Park is located in Ranga Reddy district and it is the only industrial park in the state which caters to plastic and allied sectors. Telangana Automotive sector consists of giants like Hyderabad Allwyn Limited and Hindustan Machine Tools (HMT) Bearings. There are also other big brands like Mahindra & Mahindra, Hyundai (R&D) and MRF tyres. The State has undertaken measures to shift to electric vehicles and also to have power charging infrastructure with support from central government and private participation. Under

Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME II), Telangana has been allotted 325 buses for Hyderabad and Warangal cities with 138 charging stations.

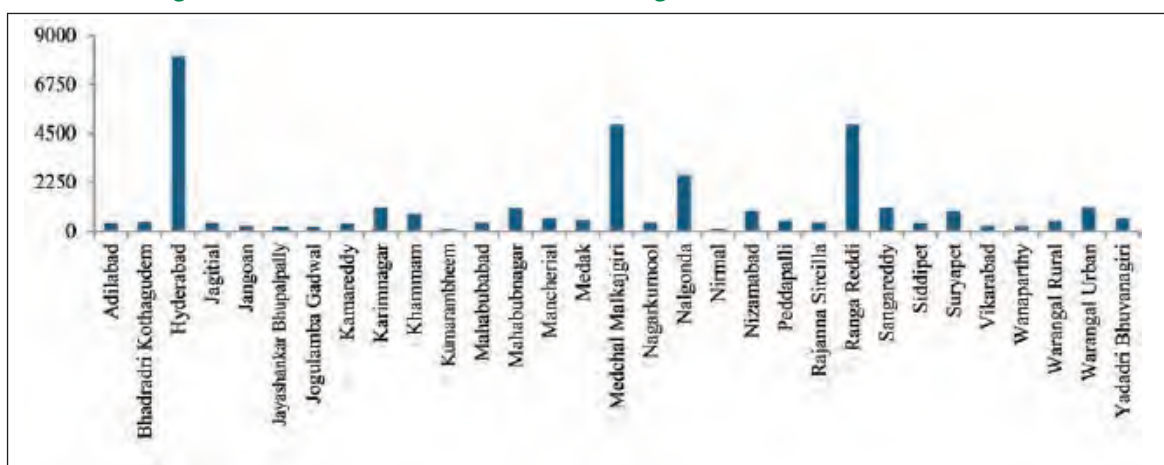
In case of retail sector, Amazon opened its largest delivery centre in Telangana State spread across 20000 square feet in Hyderabad. An assortment centre is in Patancheru that serves 500 pin codes in the state through their network and has tie-ups with 2500 small kirana shops for delivery

and pick up of goods. Another giant company, One Plus opened largest global R&D centre in Hyderabad. Walmart opened its fourth store in Warangal providing 2000 direct and indirect jobs to the local community. QuickrBazar has its outlet in Hyderabad and proposes to set up more in Nizamabad, Mancheryal, Nalgonda, Kothagudem and Khammam. Q Mart also launched its second store in Hyderabad. Flipkart also opened its data centre in Hyderabad.

Target 9.3: Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets.

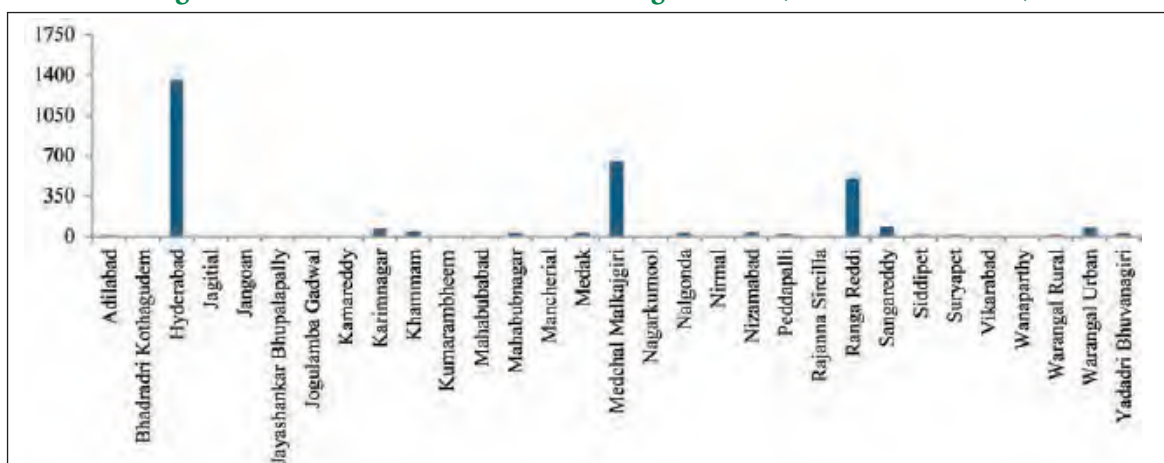
Micro, small, medium enterprises (MSME) play a major role in industrialising the economy. In the organised manufacturing sector, in Telangana State, there are 34802 micro units, 3114 small units and 624 medium units. All these MSMEs are registered under Udyog Adhaar Memorandum (UAM). Hyderabad, Medchal-Malkajigiri and Rangareddy districts have higher number of micro and small enterprises in that order while Rangareddy stands next to Hyderabad in terms of small enterprises (Figures 9.8,9.9,9.10).

Figure 9.8 Number of Micro Units in Telangana State (2015-16 to 2019-20)

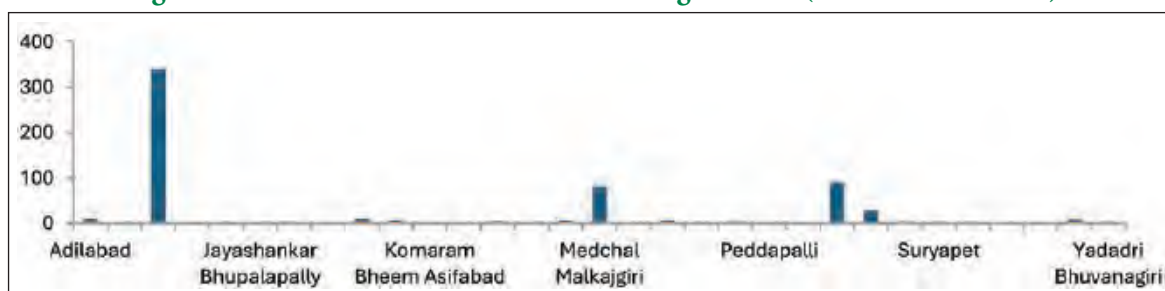


Source: Department of Industries, Govt. of Telangana

Figure 9.9 Number of Small Units in Telangana State (2015-16 to 2019-20)



Source: Department of Industries, Govt. of Telangana

Figure 9.10 Number of Medium Units in Telangana State (2015-16 to 2019-20)

Source: Department of Industries, Govt. of Telangana

MSME Green Industrial Park is inaugurated in November 2019 in Dandu Malkapur in Yadadri-Bhongir district. This Park has the capacity to house more than 450 industries; attract investments to the tune of Rs. 1553 crores and has the potential to generate around 35000 jobs. Telangana Industrial Health Clinic Limited (TIHCL) is a non-banking finance company (NBFC) caters to credit facilitation, stressed asset financing, critical amount financing for the MSMEs. It also provides Nari Assistance Revival of Industry (NARI) and Women Enterprise and Swashakti loans to women entrepreneurs. These activities are carried out by TIHCL with a Memorandum of Understanding (MoU) with State Bank of India (SBI), Association of Lady Entrepreneurs of Andhra Pradesh (ALEAP) and Confederation of Women Entrepreneurs (COWE).

In order to develop industrialisation in the Scheduled Areas, Chief Minister Scheduled Tribe (CMST) Entrepreneurship and Innovation Scheme was launched by the Tribal Welfare Department in 2017 with 100 tribal youth, in partnership with the Indian School of Business (ISB), Hyderabad for knowledge linkages. Tribal entrepreneurs are given handholding support by Dalit Indian Chamber of Commerce and Industry (DICCI) and ALEAP. An amount of Rs. 50 crore are allocated in 2017-18 and Rs.55 crore in 2018-19. Additionally, subsidy to the tune of Rs. 50 lakh is provided to the potential entrepreneurs under this scheme. In 2019-20, 32 MSME units were established with a project cost of Rs. 9.36 crores. This initiative created employment to 500 ST youth and generated Rs 40

to Rs. 50 crore of business per annum. These units are producing products like shampoo, detergents, millet and cereal based nutrient foods, chikki and sanitary napkins.

Programmes and Initiatives for Industrial Development in Telangana State

TS-iPASS

Telangana State Industrial Project Approval and Self-Certificate System (TS-iPASS) Act was enacted in 2014 enabling the speedy processing of applications to set up the industries. Till 2019, around 9000 industries with an investment of Rs 85 crores have commenced operations and provided employment to nearly six lakh population. Around 760 industries with an investment of Rs 28 crores are in advanced stage and provide employment to nearly 3 lakh people. There are nearly 645 industries in industrial stage that provide employment to around 2 lakh people and 1428 industries are yet to start construction with an employment potential of nearly 1.5 lakh. Till 2019, there are nearly 12000 new investment proposals, with an investment of Rs 1.85 lakh crore and potential employment creation to the tune of 13 lakh. The maximum number of investment proposals came from engineering industry (2422), followed by Food Processing (1839) and agro-based including cold storage (1314). The highest employment potential would be created by Real Estate, Industrial Parks and IT Buildings (721425), secondly by the Textile Industry (196702) and thirdly by Pharmaceuticals and Chemical Industry (64646).

Table 9.6 TS-iPASS - Approvals Issued by Major Departments

Department*	2016	2017	2018	2019	2020	Total approvals issued
TSSPDCL	310	823	723	668	616	3140
TSNPDCL	293	873	1004	1147	1335	4652
FACT	217	1036	832	696	633	3414
PCB	136	846	865	691	673	3211
DTCP	105	441	305	318	356	1525

Source: Department of Industries, Govt. of Telangana; *Telangana State Southern Power Distribution Company Ltd; Telangana State Northern Power Distribution Company Ltd; Pollution Control Board; Directorate of Town and Country Planning

Table 9.7 District Wise Total Number of Registered Units, Investments and Employment According to TS-iPASS (2015-2021)

District	No. of units	Investment (Rs. in crores)	Employment
Medchal Malkajigiri	3327	13593	104539
Sangareddy	1149	12544	95767
Rangareddy	1089	67431	881050
Karimnagar	996	3866	12407
Jagityal	611	306	4323
Warangal Urban	608	1005	8946
Khammam	549	861	6666
Nizamabad	449	633	10813
Rajanna	426	627	4748
Nalgonda	389	27061	12235
Medak	365	3750	15937
Yadadri	364	3983	12937
Peddapalli	352	13644	4090
Warangal Rural	323	594	
Vikarabad	307	1334	4252
Bhadradi	297	21917	9969
Mancheiral	296	6003	1657
Siddipet	276	2228	10709
Kamareddy	264	2741	3868
Mahabubnagar	264	7677	19689
Mahabubabad	253	515	2804
Jangaon	229	3512	3431
Adilabad	208	89	1625
Suryapet	193	3046	5638
Kumuram Bheem	151	118	1229
Nirmal	127	573	995
Jayashankar	122	2049	3213
Nagarkurnool	92	1575	2416
Jogulamba	66	2210	1319
Wanaparthi	58	1122	2437
Hyderabad	42	731	15518
Mulugu	15	3	96
Narayanpet	11	7	145

Source: Industries Department, Govt. of Telangana

Medchal Malkajigiri, Sangareddi and Rangareddy have the highest number of units, while Rangareddy, Nalgonda and Bhadrachari have the high investment. Rangareddy, Warangal Rural and Medchal Malkajigiri account for high employment (Table 9.7).

After the initiation of TS-iPASS, there has been a threefold increase in the number of units and employment, investment increased by 33 percent. In 2020, in 15 districts there was an increase in investments while in 18 districts there was an increase in employment opportunities. The sectors that made large investments through TS-iPASS are 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 fertilisers (4.2%). The sectors that registered large number of jobs are real estate, industrial parks and IT buildings (57.2%), food processing (3.9%), engineering (3.5%).

T-IDEA

The Telangana State Industrial Development Entrepreneur Advancement (T-IDEA) caters to industrial entrepreneurship. As of 31 December, 2019, incentives have been provided to nearly 3000 cases in the form of investment subsidy, sales tax, stamp duty, land cost and land conversion, pavalavaddi, cancellation of mortgage duty, skill upgradation and training, power cost reimbursement with a total amount of Rs 334.62 crore being sanctioned.

T-PRIDE

Telangana State Program for Rapid Incubation of Dalit Entrepreneurs (T-PRIDE) Scheme encourages Scheduled Caste/Scheduled Tribes for establishment of enterprises with special incentive package by the Government. During 2019-20, nearly 5,600 units of SC entrepreneurs with an amount of Rs.216.39 crores and 2,870 units of ST entrepreneurs with an amount of Rs.139.13 crores have been provided with financial incentives under this scheme. During 2020-2021, out of 20036 beneficiaries for whom subsidy is sanctioned, subsidy is released to 13744 beneficiaries.

Telangana State Industrial Development Corporation (TSIDC)

TSIDC was incorporated in 2014 and was registered under Companies Act, 2013. TSIDC participates in equity in MSME projects, extends term loans and bill discounting facility also extends short term and working capital loans.

Atmanirbhar Bharath Abhiyan

Atmanirbhar Bharath Abhiyan is announced by Govt. of India to help the MSME units in the post COVID scenario. One of the important schemes was Collateral free loans for businesses: Emergency Credit Line Guarantee Scheme (ECLGS), Guaranteed Emergency Credit Line (GECL). All businesses (including MSMEs) will be provided with collateral free automatic loans of up to three lakh crore rupees. MSMEs can borrow up to 20 percent of their entire outstanding credit as on February 29, 2020 from banks and Non-Banking Financial Companies (NBFCs). The progress under the scheme is as follows:

Table 9.8 Progress under ECLGS/GECL of Atmanirbhar Bharat Abhiyan in Telangana State

	Eligible Accounts		Sanctions		Disbursal	
	No. of accounts	Eligible Amount (Rs. In Crs)	No. of accounts	Amount Sanctioned (Rs. In Crs)	No. of accounts	Amount disbursed (Rs. In Crs)
Total	189780	5784.44	138707	5226.23	118208	4730.77

Source: Department of Industries, Govt. of Telangana

Target 9.4: *By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities*

Telangana State Industrial Infrastructure Corporation (TSIIC) is the nodal agency for creation of industry infrastructure in Telangana State. This Corporation identifies potential sites for industrial parks, acquires land for setting up of industrial parks, provides infrastructure facilities

in industrial parks, established Special Economic Zones (SEZ) on public private partnership mode. In 2019-20, TSIIC allotted 1520 acres of land to 526 industries which would provide direct and indirect employment to around 8600 persons. As of June 2017, Telangana State had 146 SEZs; of which, 29 are operational, 52 are notified and 64 are formally approved.

In collaboration with Government of India, cluster development programme was undertaken by Telangana (Table 9.9).

Table 9.9 Cluster Development in Telangana

Cluster	Project Cost (lakhs)
Auto Nagar Hyderabad, Rangareddy Dist.	990.75
Industrial Park Buggapadu, Khammam Dist.	848.13
Industrial Park Sulthanpur- FLO, Sangareddy Dist	940.05
Industrial Park, Kallem, Jagaon Dist	1070.88
Industrial Park, Warangal (Urban), Dist	929.34
Auto Nagar Hyderabad, Rangareddy Dist.	1054.26
Industrial Park, Bhongir, Yadadri Dist	714.17

Source: Department of Industries, Govt. of Telangana

TSIIC as a representative of Govt. of Telangana participates in public-private partnerships and also in joint ventures. It acts as Industrial Area Local Authorities by delegating functions to local bodies for the development of industrial parks. Its headquarters is located at Hyderabad and has zonal offices in Cyberabad, Medchal, Siddipet, Karimnagar, Nizamabad, Patancheru, Shamshabad, Yadadri, Khammam and Warangal.

TSIIC has proposed to set up 12 industrial parks in the areas of leather, pharmaceuticals, textiles, medical devices, food processing, seeds, spices, plastic, MSME, National investment and manufacturing zone (NIMZ), aerospace, electromagnetic compatibility. These parks are in various stages of initiation.

Development of Life Sciences Sector of Telangana

Life Sciences sector in Telangana State contributes around 10 percent of Gross State Domestic Product

(GSDP) and provided employment to more than 70000 people during 2016-2020. Despite widespread health and economic distress caused by COVID-19 pandemic, the Life Sciences sector in the state witnessed tremendous developments during the year. Top investors were Aurobindo Pharma, Divis Laboratories, Biological E, Dr. Reddy's Laboratories, GVK Biosciences, NATCO Pharma and many more.

Medical Devices Park

Medical Devices Park, launched in 2017 is spread across 302 acres, 92 acres have already been allotted (more than 50 percent of the allottable land) to 37 companies. Total investment envisaged for the park is INR 1130 crores and total employment being 5925.

Hyderabad Pharma City

Hyderabad Pharma City has been one of the important initiatives of the Government. Spread

across 19,000 acres, Government intends to develop Hyderabad Pharma City as a new international benchmark for smart, innovative, eco-sensitive and sustainable integrated industrial cluster for the pharmaceutical value chain.

Telangana State Mineral Development Corporation (TSMDC)

TSMDC is a state-owned corporation initiated in 2014 and caters to development of mineral resources and their exploration. The State under TSMDC is endowed with mineral resources like black granite, limestone, road metal and sand.

Telangana State Trade Power Corporation (TSTPC)

Telangana State Trade Power Corporation (TSTPC) has been incorporated on 27 September 2014 under the Companies Act 2013 with paid-up share capital of Rs. 1.00 lakh and authorized share capital of Rs. 50.00 lakhs. By conducting trading programmes on exports, holding exhibitions, creating awareness on export commodities the TSTPC aims to expand the trading activities of the entrepreneurs. It also establishes logistic and trade promotional infrastructure like cold storage plants, container freight stations, inland container depots, logistic hubs, exhibition and convention centers and truck parking terminals. It caters to the paper products industry, government departments and general public by manufacturing paper products including note books (Golkonda brand) and plain copier paper. The turnover of the Paper Products Division has achieved a sales target of Rs. 40.00 crores during 2019-20.

With regard to Export performance of Telangana State, exports increased from Rs.35,444 crores

(2015-16) to Rs.52,170 crores (2019-20). Telangana State is also one among the top states in IT & IT enabled services and its exports increased from Rs.75,070 Crores-(2015-16) to Rs.1,28,807 crores in (2019-20). The overall Telangana Exports (both Merchandised and Services Sector) for the period 2019-20 are at Rs 1, 80,977 crores as against Rs 1,59,729 crores during the previous year 2018-19, registering a growth of 10.37% in last five years (2015-20).

Target 9.5: *Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending*

Telangana State aims to enhance scientific research and at the same time envisages upgrading the technological capabilities to encourage innovation. In this regard, the state government launched the new Information and Communication Technology (ICT) Policy to augment the growth in Information Technology (IT) IT/Information Technology Enabled Services (ITES) sector. The major objective of this policy is to attract investments and employment generation. Additionally, the Government of Telangana has also launched Electronics Policy, IMAGE Policy Innovation & Rural Technology Center Policy to augment the growth in these sectors. Further it has also launched sector specific policies such as Data Centres Policy, Open Data Policy, Cyber Security Policy, Data Analytics Policy, IoT Policy and e-Waste Policy.

Figure 9.11 Performance of IT/ITES Sector (Exports, Employment) 2014-15 to 2019-20
(crores and number)



Source: ITEC Department, Govt. of Telangana

In 2019-20, the total value of IT Exports accounted for Rs.1,28,807 crores with an employment of 5,82,126 professionals.

Hyderabad is home to some of the leading software companies globally, such as Microsoft, Google, IBM, Oracle, DELL, Motorola, Deloitte, Converges, UBS, Computer Associates, Amazon, AMD, NVidia, Cap Gemini, Computer Science Corporation, Bank of America, Hitachi, HSBC, Honeywell, Siemens, JP Morgan, United Health Group, Face Book, Apple, ZF Technologies, Sales Force, DBS Asia, Digital Domain etc. Google, Amazon, Apple and Microsoft have their largest development center outside the US in Hyderabad. Besides this, Indian IT majors such as Infosys, Wipro, TCS, Polaris, Tech Mahindra, Cyient, HCL, Cognizant have large software development centres in Hyderabad.

T-Hub

Telangana Hub (T-Hub) is India's first pioneering innovation ecosystem that empowers upcoming generation products and new business models. It was incorporated in 2015. Since its inception it provided nearly 1100 national and international start-ups with access to better technology, mentors, customers, talent, corporations, investors and government agencies. After achieving an impressive

accomplishment in the establishment of T-Hub, Government of Telangana has embarked on a plan to develop T-Hub Phase-II. T-Hub Phase-II is being constructed in 3 Acres of land providing IT Incubation space for IT Entrepreneurs / Professionals. The construction activity is in progress.

Women Entrepreneur (WE) Hub

WE Hub is India's first and only State led Incubator created in 2017 to promote and foster women entrepreneurship (urban, social, earlypreneurs, women back to workforce). So far 320 jobs are created; 276 start-ups supported; 148 start-ups incubated; 47 partner connects; 12 Start-up programmes initiated; 3427 entrepreneurs engaged with 50 service providers.

Telangana Academy of Skills and Knowledge (TASK)

Government of Telangana has created a unique institution called Telangana Academy of Skills and Knowledge (TASK). TASK is a unique and first of its kind initiative in the country with an objective to strengthen the quality of graduates coming out of Degree & Engineering colleges by imparting Industry ready skills both technical and non-technical (soft skills). TASK imparts skilling programs in emerging technologies that are being

current deployed in the IT/ITES Industry. More than 800 colleges have registered with TASK and over one lakh youth from across Telangana have been skilled since TASK's inception in June 2015. IBM and TASK have joined together to train 30000 students. Additionally, TASK, Telangana State Council for Higher Education (TSCHE), Microsoft and NASSCOM have come together to train 30000 students in artificial intelligence (AI). Yet another achievement under TASK is that Amazon Web Services has come forward to invest around Rs.20000 crores in data centres in the state.

Hyderabad City Knowledge and Innovation Cluster are Led by Research Industry

Collaboration Hub (RICH). In 2018-19, RICH worked with 10 start-ups in Aerospace, Defence and Sustainability sector, 18 in the Food and Agriculture Sector and 20 in Life Sciences Sector.

Society for Telangana Network (SoftNet)

Soft Net provides quality education and training by utilizing the potential of Satellite Communications and IT. Its training facilities in the area of Women and Child Welfare, Rural Development, Skill Development, Health, Agriculture Extension. T-SAT NIPUNA and T-SAT VIDYA cater to the distance learning, Agriculture Extension, Rural Development, Tele-Medicine and E-Governance requirements (Table 9.10). SoftTNet also promotes digital and cashless payments through awareness videos.

Table 9.10 Companies Providing Distance Learning

Company	TSAT Vidya	TSAT Nipuna
Airtel	948	949
Tata Sky	1479	1480
Sun Direct	195	196

Source: SoftNet

SoFTNET has entered into a fresh MoU with International Space Research Organisation that came into effect from 28 September 2016. Apart from the launch of TS-Class programme, it also started coaching classes for Telangana State Public

Service Commission (TSPSC) Group II Services aspirants.

For the Automotive Sector, Uber launched its Electric Car fleet in Hyderabad, IKEA, WIPRO, Cognizant have shifted to electric vehicles, proposal submitted by Hyundai Motors to expand its technology centre. Uber launched its electric car fleet in Hyderabad in partnership with Mahindra Electric. Zoom car initiated a switch on of its vehicle fleet in Hyderabad towards electric with an initial count of 40 electric cars.

As a part of 'Digital India Programme' and to foster e-governance, the government is expanding digital infrastructure to the rural areas and Gram Panchayats. The digital empowerment of Gram Panchayats (GPs) ensuring affordable and quality internet services is intended to enhance efficiency in the public delivery system. The Government of India has introduced BharatNet Project under which all GPs in the countries are to be provided with last mile Fibernet Connection.

Similarly, the government is aiming at promoting digital empowerment of people residing in rural India. The government is intended to ensure affordable, equitable, and high-quality internet connectivity available to rural population. The Government of India launched Pradhan Mantri Jan-Dhan Yojana (PMJDY) aiming at ensuring access to banking facility for every adult (previously households) in the country who till now had no bank account by facilitating opening of basic banking account. The Government of Telangana is laying fibre optic cable lines along with Mission Bhagiratha water pipelines to provide digital connectivity throughout the State.

Hyderabad is also home to many companies in the Visual Effects (VFX), Gaming and Animation sectors. About 30,000 are gainfully employed in these verticals in the city at various levels. There is scope for taking this employment in these verticals up to 1 lakh in the next 3 years to 4 years. The Government has released a Policy for Animation and Gaming and has proposed creating the IMAGE Tower, a state-of-the-art facility for supporting

innovation in media, animation, gaming, and entertainment. **IMAGE Tower is being developed in an area of ten acres in Raidurgam village, Ranga Reddy district on a Joint Development basis / Public Private Partnership (PPP) mode.**

Government of Telangana aims to transform the state into a Knowledge Society and make accessible the benefits of IT to the last mile of the State and to all citizens, especially those in Tier-II cities and rural areas such as Warangal, Khammam, Karimnagar, Mahabubnagar, Siddipet and Nizamabad. Government of Telangana has announced a dedicated policy to supplement the growth and development of Tier-II cities and rural areas and to motivate IT industry to set up operations there.

In order to have a balanced socio-economic development of the State, and to ensure technology jobs for youths from various districts, Government of Telangana is developing IT Towers in Warangal, Karimnagar, Khammam, Mahabubnagar, Siddipet and Nizamabad District. The IT Tower (Phase-I) in Warangal is operational and Phase-II is under construction. The IT Tower at Karimnagar is operational and ready for occupation in Khammam and in Mahabubnagar and Nizamabad are under construction. Foundation stone has been laid for Siddipet IT Tower in December, 2020.

New IT Clusters

Apart from sustaining the growth in the western corridor, the Government of Telangana is focussed on spreading the growth of IT around the city. To this extent, the Government has launched Growth in Dispersion (GRID) Policy to enable IT and ITES companies establish units in clusters outside of the western corridor. The Government will be 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.

SME Registration

As per G.O. 223, Dt. 31-08-2010 issued by IT&C Dept., Small Medium Enterprises (SME)

is recognized as an important constituent of the National Economics, contributing significantly to employment expansion and innovation. Telangana State Technology Services (TSTS) is maintaining new SME registration list from 2016 and till 2020 TSTS has empanelled 9 Start-up Companies and 18 SME Companies under different groups and participations are being invited from these empanelled SMEs for various IT initiatives.

Efficacy/Challenges

Capacity building of the MSME entrepreneurs is carried out with the support from Enterprise Development Centres (EDCs) located within the District Industries Centres (DICs). The success of these centres depends on knowledge creation and dissemination of knowledge to the MSMEs. Hence it is highly essential to strengthen these institutions such that they run in a professional manner and facilitate development of entrepreneurs into full-fledged and self-sustaining enterprises. MSMEs lack expertise in product development, technology adoption and marketing strategy. To alleviate these problems, it is recommended that Government should build networks of development service providers that can provide customized solutions to MSMEs in the area of technology, product development and marketing techniques. Further, the Committee recommends for strengthening of MSME Export Promotion Council (rbi.org.in, 2019).

9.3 The Way Forward

MSME entrepreneurs need to pay more attention to manpower and markets to cope with the e-commerce activities. Since the MSMEs are not facing the problem of power cuts anymore, the entrepreneurs need to concentrate and develop ways and means to conduct businesses efficiently. Startups and first-generation entrepreneurs need to be encouraged more. Incubation centres to be extended to Tier II and Tier III centres for encouraging business activities. Growth of industry should be inclusive in nature by bringing the vulnerable groups and women into

the entrepreneurship activity. Production and promotion of indigenous activities will go a long way in creating more employment opportunities in small and remote areas.

COVID 19 Pandemic resulted in huge losses to micro and small enterprises and start-ups. Policies and strategies need to be in place to cope up with disasters like the pandemic so that in times of

emergencies the small firms and small entrepreneurs get all the necessary support, including access to financial support.

Priority needs to be accorded to creation of more industrial parks and estates with State-of-the-Art infrastructure facilities, health and educational facilities within the parks and estates such that there is an increase in productivity and efficiency.

Annexure 9.1 Sector Wise Number of Units, Investment, Employment, 2015- 2020 (January-December)

Sector	2015			2020		
	No of units	Investment (Cr)	Employment	No of units	Investment (Cr)	Employment
Granite and Stone Crushing	83	235.32	1901	206	272.36	3007
Cement, Cement & Concrete Products	84	126.91	872	415	184.13	4538
Others	11	27.18	161	45	442.28	1462
Thermal Power Plant	9	10098	5597	0	0	0
Plastic and Rubber	117	525.944	3264	150	854.01	3486
Aerospace and Defence	6	207.83	760	0	0	0
Electrical and Electronic Products	37	616.49	3299	47	130.48	1723
R&D	1	2.35	9	38	154.4	2317
Engineering	161	442.65	3690	495	588.54	7360
Paper and Printing	49	115.4	930	84	321.82	1756
Textiles	27	73.32	824	150	1792.4	4848
Real Estate, Industrial Parks and IT Buildings	1	132.9	0	14	19922	124829
Solar and Other Renewable Energy	56	2186.62	973	20	2788.2	808
Agro based incl Cold Storages	160	315.137	4042	456	210.16	3350
Automobile	8	407.186	1110	3	1.72	18
Wood and Leather	6	17.14	295	66	22.84	623
Food Processing	240	1846.28	7710	570	615.31	7936
IT Services	3	1824.5	13650	0	0	0
Beverages	3	547	759	78	82.421	647
Fertilizers	0	0	0	26	87.153	692
Pharmaceuticals and Chemicals	179	2303.58	12123	142	2197.2	9371
	1241	22051.7	61969	3005	30668	178771

Source: Department of Industries, Govt. of Telangana

Annexure 9.2 SDG 9 – Targets and Indicators

Target 9.1: *Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all*

Target	National Indicator	State Indicator (SIF)	Base value 2020	Target		
				2022	2025	2030
9.1	9.1.1. Proportion of the rural population who live within 2 km of an all-season road	Total Villages connected with BT Roads	18996	19766	20705	24359

Target 9.2: *Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries*

Target	National Indicator	State Indicator (SIF)	Base Value 2020	Target		
				2022	2025	2030
9.2	9.2.2. Manufacturing employment as a proportion of total employment	9.2.2. Manufacturing employment as a proportion of total employment	121552			

Target 9.3: *Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets.*

Target	NIF	State Indicator Framework (SIF)	Base Year	Targets		
			2020	2022	2025	2030
9.3		GP Buildings Having Last Mile Fibernet Connection (No.)	5765 (45%)	75%	100%	
		Villages Having Last Mile Fibernet Connection (No.)	12738	12738	12738	12738
		Total PMJDY Accounts (in crore)	0.97			
		Rupay Cards issued in PMJDY Accounts (in crore)	0.8			
		New MSMEs (Micro Small Medium Enterprises) in Organised sector (No.)	49677			
		Percentage / Proportion of Credit Flow to MSMEs	44.9			

Sustainable Development Goal - 10

Progress with Distributive Justice and Reduced Inequalities



Vision

War on Inequalities

The State of Telangana predominantly consists of vulnerable and poorer socio-religious groups comprising close to 90% of the population. The central goal of the vision of Bangaru Telangana focuses on inclusive development, that is, “progress with distributive justice”. Telangana has emerged as a model welfare State in the country with a wide range of innovative initiatives particularly for the disadvantaged and the deprived segments of the society, such as, the Scheduled Castes, Scheduled Tribes, Backward Classes, minorities, women, children, the elderly and the economically backward. Acknowledging the imperative of a multi-pronged approach to bridge the disparities in the State the Government adopted a holistic strategy so that the interventions of the State Government encompass economic, social, educational, and political domains. Official data demonstrates that in rural areas the share of the poorest 20% in the total consumption (a measure of economic inequalities) increased significantly from 8.9% to 10.7% while in urban parts it increased marginally from 8.2 to 8.5. Corresponding shares for the richest 20% declined significantly in both rural and urban areas between 2004-05 and 2011-12 indicating that overall consumption inequality in the State has declined.

Through the SC and ST Special Development Fund, the State Government earmarks a portion of the total budgetary outlays of the State in proportion to the population of SCs and STs. With respect to economic, educational, and social advancement of SCs, STs and BCs, the State Government implements a wide range of comparable interventions. Economic enhancement schemes meant for SCs, STs and BCs

are implemented through their respective SC, ST, and BC Corporations. Political empowerment of SCs, STs, BCs, women and minorities has been achieved through reservations in legislative and governance bodies at different levels and several initiatives are under way to ensure adequate representation in the State Assembly and the Parliament. And budgetary allocations over the years for the above groups have been substantially enhanced to realize accelerated decline in inequalities. The index of backwardness shows that the SCs and STs remain the most backward and deprived in the State, followed by the OBCs among Muslims, Hindu OBCs, and other Muslims. And conversely, the “Others” category is relatively most developed (that is, least backward or deprived). The Covid-19 pandemic for two successive years has adversely impacted the revenue collections. Despite the budgetary constraints the State Government is pressing ahead to realize its vision and to achieve the targets under the SDGs.

Achievements

- According to the composite SDG India index (2019-20), Telangana stands as the top-performer in the country with the highest score in the index. Telangana secured the highest score of 94 which makes it the “front-runner” with respect to the SDG 10.
- In rural areas the share of the poorest 20% increased significantly from 8.9% to 10.7% while in urban parts it increased marginally from 8.2 to 8.5.
- Land purchase scheme for SC women is among the flagship programmes of the Government. Since its launch in 2014-15, 16,244 acres have been purchased and distributed to 6,493 households, with an investment of Rs 715.39 crore.

- During 2019-20, 5,603 units of SC entrepreneurs with an amount of Rs 216.39 crore and 2,870 units of ST entrepreneurs with an amount of Rs 139.13 crore have been provided with financial incentives under the T-PRIDE scheme.
- Out of the total 3,370 elected representatives of 139 ULBs, 1,820 are women and 1,550 are men. Political empowerment of women has been extended to rural local governments

Challenges

Though the consumption distribution of the State indicates reduced inequalities overall, the consumption data shows that the SC and ST groups lag in catching up with growth. Additionally, the differences in poverty levels between social groups persist, this is more prominent among the SCs and STs. This is a major challenge. Another challenge is to reduce the differences in poverty levels in the rural areas. The governments needs to focus on availability of resources and timely and regular release of budget. In the absence of reliable and authentic data, it becomes difficult for the state to implement the resources and budget towards achieving this goal.

10.1 The Context

Equal Opportunities for All

Inequalities in societies not only adversely affect the pace of development but also undermine social and political institutions. Inequalities in access to opportunities in the spheres of education, health, employment, political, and economic decision-making bodies further impact economies by preventing people from realising their full potential.

Goal 10 calls for progressively reducing not only income inequalities but also inequalities of outcome by ensuring access to equal opportunities and promoting social, economic and political inclusion of all, irrespective of age, sex, disability,

race, ethnicity, religion or another status relevant within society. The Goal also aims to enhance representation and voice for developing countries in decision making in international institutions.

The State of Telangana predominantly consists of the vulnerable and poorer socio-religious groups who make up close to 90% of the population. The central goal of the vision of *Bangaru Telangana* focuses on inclusive development, that is, “progress with distributive justice”. The vision of the Government of Telangana is encapsulated in the following words: “Growth has no meaning and legitimacy if the deprived sections of the society are left behind. Inclusive growth should not only ensure a broad-based flow of benefits and economic opportunities, but also encompass empowerment and participation”.

Within a span of five years, Telangana has emerged as a model welfare State with a wide range of innovative initiatives particularly for the vulnerable and the deprived segments of the society. The targeted interventions are not only aimed at the disadvantaged and vulnerable sections such as, the Scheduled Castes, Scheduled Tribes, Backward Castes, minorities, women, children, the elderly and the economically backward, but also maintaining sectoral and regional balance in the development of the State. The State’s initiatives towards political inclusion and empowerment ensure that the politically marginalized sections are provided adequate representation in legislative and decision-making bodies.

According to the composite SDG India index (2019-20) prepared by NITI-Aayog for the SDG 10 (reduced inequalities), Telangana stands as the top-performer in the country with the highest score in the index. Telangana secured the highest score of 94 which makes it the “front-runner” with respect to the SDG 10.⁷⁰ This is a testimony to the policy and programmatic interventions of the Government of Telangana towards social, economic, and political inclusion of the disadvantaged and vulnerable sections. Lowering

70 SDG-INDIA: Index and Dashboard, 2019-20, NITI-Aayog, Government of India.

and eliminating poverty is an integral part of the Government's strategy to reduce disparities in the State. As the Government's strategy and action plan outlined in the following sections show, its interventions are rightly focused on the poorer and deprived socio-religious groups.

10.2 Key Indicators

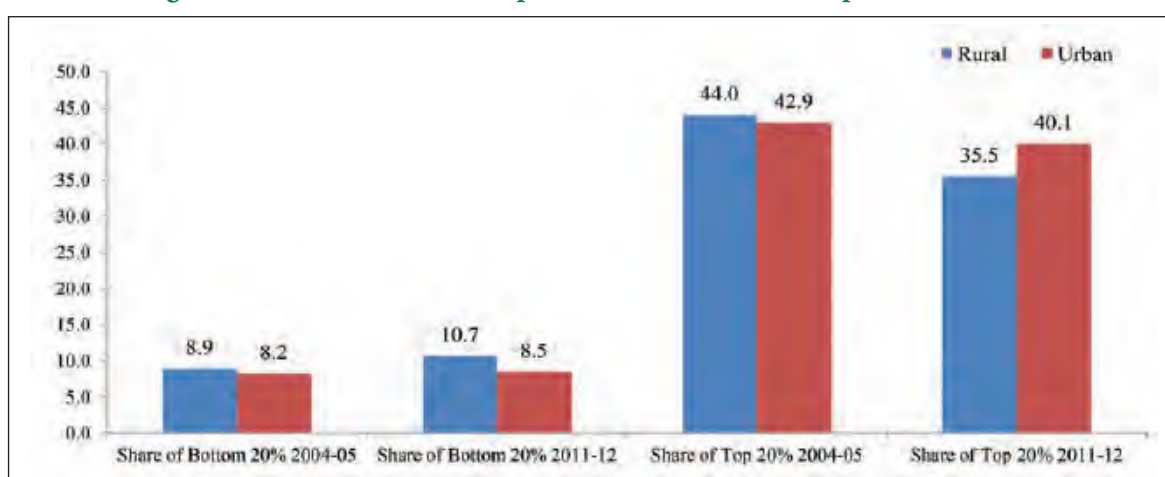
Share of Bottom 20% in the Total Consumption of the State

The share of bottom 20% of population in the total consumption is a simple and easily understood measure of consumption (economic) inequalities in a society. This measure is based on household consumption surveys carried out by the State and Central statistical agencies. After the formation of Telangana State, this survey was conducted in 2017-

18. However, the survey data is yet to be finalized for any use. Therefore, the following analysis is based on the consumption data pertaining to Telangana State extracted from the data of surveys conducted in 2004-05 and 2011-12.

In rural areas the share of the poorest 20% increased significantly from 8.9% to 10.7% while in urban parts it increased marginally from 8.2 to 8.5. Corresponding shares for the richest 20% declined significantly in both rural and urban areas between 2004-05 and 2011-12, more so in rural areas. The increasing share of poorest 20% can be inferred as declining overall consumption inequality in the State. The extent of decline in the share of the richest 20% in rural and urban areas is higher than the gains of poorest 20% indicating that the growth during this period was broad based.

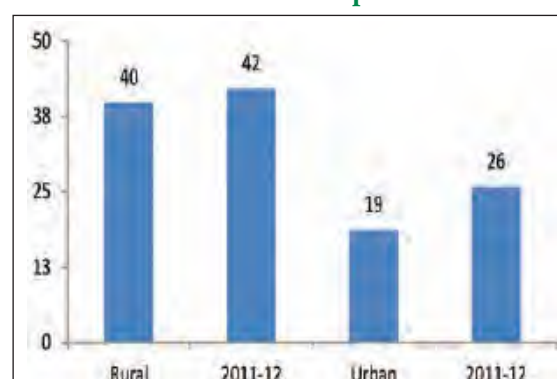
Figure 10.1 Share of Bottom/Top 20% in the Total Consumption of the State



Source : Household consumption survey

Though the consumption distribution of the State indicates reduced inequalities overall, the consumption data shows that the SC and ST groups lag in catching up with growth. In 2004-05, the SC and ST population accounted for 40% in the bottom 20% of the rural population; it increased to 42% by 2011-12. In other words, the concentration of SC and ST groups in the bottom end of the distribution remained almost stagnant. In urban areas the concentration of SC and STs in bottom 20% has increased sharply from 19% to 26%. This is a serious concern.

Figure 10.2 Proportion of SCs and STs in the Bottom 20% of Population



Source : Household consumption survey

Scheduled Castes and Scheduled Tribes

The Government of Telangana accords high priority to the development of the marginalized and the poorer social segments of the State, represented by the Scheduled Tribes and the Scheduled Castes who constitute 9.08% and 15.45% of the State's population respectively (2011 Census). Data pertaining to the core human and economic development indicators shows that the SCs and the STs are at the bottom of the socio-economic hierarchy in the State. Therefore, it is an imperative to bridge the development divide between these two categories and other social groups to enhance the living standards of the people and to move towards realizing the goal of *Bangaru Telangana* (Golden Telangana).

In 2017 the State Government enacted a legislation - *The Telangana State Scheduled Castes and Scheduled Tribes Special Development Fund (Planning, Allocation and Utilization of Financial Resources) Act, 2017*. The Scheduled Tribes and Scheduled Castes Special Development Fund (SDF) Act has replaced the Sub-Plan Act – the Andhra Pradesh Scheduled Castes Sub-Plan and Tribal Sub-Plan (Planning, Allocation and Utilization of Financial Resources) Act, 2013. The State Government framed detailed rules under the Act.

The SDF Act is aimed at ensuring accelerated development of SCs and STs with emphasis on achieving equality, focusing on economic and human development along with security and social dignity and promoting equity among SCs and STs. In accordance with section 3 of the SDF Act, the State Government shall earmark a portion of the total *pragathi paddu* outlay of the State in proportion to the population of SCs and STs in the state in every financial year to be called as the SC and ST Special Development Fund. The Act states that the Special Development Funds of the Government Departments shall include only such

schemes that secure direct and quantifiable benefits to the ST/SC individuals or households or SC habitations or tribal areas that have the potential to bridge the gaps in development.

A special provision is made in the SDF Act to utilize the unspent balances in a financial year in the form of compensation or a carry forward mechanism in the next financial year. In order to ensure effective implementation of the SDF, detailed rules were framed, and guidelines were issued in 2017 defining roles and responsibilities at different levels – from State to the District level. The Government has also established a dedicated online portal – SCST Fund Monitoring System – for effective and real-time monitoring of the funds utilization and outcomes. All the SDF implementing Departments need to regularly upload both financial and physical achievements on the portal.

During the first year of the STSDF, 36 Departments of Telangana Government implemented different schemes that were targeted at the STs; and by 2018-19 the number of implementing Departments has risen to 40. Similarly, over the past five years the number of implementing Departments under the SCSDF has increased from 33 to 39.

The SCSDF

The State Government has been fulfilling the statutory norm of allocating funds in proportion to the SC population in the State, that is, 15.44% of the total *pragathi paddu* outlays. Over the past five years the allocations under the SCSDF have shown an upward trajectory – with the allocation in 2019-20 standing at Rs 12,400.22 crore. Although projections are currently unavailable, going by the past trends it may be stated that the SCSDF allocations in the coming years are likely to continue the upward trend.

Table 10.1 The SCSDF Component of Total Plan Outlay in Budgets (in Rs crore)

Year	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Total Plan Outlay (BE)	48637.9	52374.6	67630.7	88038.8	104758	75263.2
SCSDF (BE)	7579.45	8089.24	10484	14375.1	16452.8	12400.22
Percentage of SCSDF to total plan outlays	15.58	15.44	15.5	16.33	15.71	16.48
Expenditure (as % of the outlay)						10250.79 (83%)

Source: Budget Documents, Government of Telangana

The STSDF

The State Government has been fulfilling the statutory norm of allocating funds in proportion to the ST population in the State, that is, 9.08% of the total *pragathi paddu* outlays. Over the past five years the allocations under the STSDF have shown

an upward trajectory – with the allocation in 2019-20 standing at Rs 7184.87 crore. Projections by the Tribal Welfare Department show that the outlays under the STSDF are likely to rise to Rs 10748.41 crore by 2022-23 and to Rs 18164.8 crore by the SDGs' target year of 2030.

Table 10.2 The STSDF Component of Total Plan Outlay in Budgets (in Rs crore)

Year	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Total Plan Outlay (BE)	48637.9	52374.55	67630.73	88038.80	104757.90	75263.24
STSDF (BE)	4559.81	5035.68	6171.15	8165.87	9693.11	7184.87
Percentage of STSDF to total plan outlays	9.38%	9.61%	9.12%	9.27%	9.25%	9.55%
Expenditure (as % of the outlay)						6357.84 (89%)

Source: Budget Documents, Government of Telangana

However, an assessment of the actual implementation of both the SCSDF and the STSDF reveals that the actual expenditures have been marginally lower than the budgetary allocations and the releases. There has been steady improvement since 2014-15 on this front, both in terms of the actual expenditure vis-à-vis the budget releases and the releases in relation to the budget outlays. Fully acknowledging this priority, the Telangana Government has set targets for expenditure to make the SDFs more impactful. Under both the SCSDF and the STSDF the target is to achieve 100% expenditure as well as higher investments in absolute terms – the target is to utilize Rs 17,438.21 crore by 2030.

SC and ST Beneficiaries

Acknowledging the imperative of a multi-pronged approach to bridge the disparities between the SCs/STs and other social groups, the Government of Telangana adopted a holistic strategy for the socio-economic upliftment of SCs and STs. The interventions of the State Government encompass economic, social, educational, and political domains. In compliance with the Constitutional mandate, the State Government provides proportional representation to SCs and STs (15% and 6% respectively) in education, employment, and legislative bodies at different levels, including Panchayati Raj Institutions (PRIs) and Urban Local Bodies (ULBs).

With respect to economic, educational, and social advancement of SCs and STs the State

Government – represented by the Scheduled Caste Development Department and Tribal Welfare Department respectively – implements a wide range of comparable interventions. Key initiatives, in this context, include: (1) Pre-matric and post-matric scholarships (2) Pre-matric and post-matric hostels (3) Best Available Schools scheme (4) Kalyana Lakshmi scheme (4) Financial assistance for overseas education under Ambedkar Overseas Vidya Nidhi scheme (5) Residential schools and colleges across the State under the management of their respective autonomous bodies – TSWREIS and TTWREIS (6) KCR Kit scheme (7) Construction of Community Halls – Ambedkar Bhavans for SCs and Girijan Bhavans for STs (8) Waiver of electricity charges for domestic consumption up to 101 units.

Furthermore, there are some special initiatives aimed at the well-being of SCs, such as – incentives for inter-caste married couples; Study Circles for providing free coaching to SC students for different competitive examinations; prevention of atrocities against SCs; and financial assistance to the victims of atrocities. Similarly, the State Government also implements special targeted schemes for the welfare of STs, such as – Chief Minister's Giri Vikasam for providing irrigation facilities to small and marginal farmers; nutritious food is provided to alleviate malnutrition among pregnant and lactating women and children of 3-6 age group under Nutribasket Scheme (Giri Poshana); and a comprehensive Conservation-cum-Development Plan (CCDP) for the overall development of the poorest and most vulnerable tribal communities in the State, known as Particularly Vulnerable Tribal Groups (PVTGs) consisting of Chenchus, Kolams, Thotis and Kondareddis.

Economic and livelihoods enhancement schemes meant for SCs and STs are implemented through their respective SC and ST Corporations. The core objective of the SC Corporation is to extend financial assistance for the creation of income-generating assets to the poor SC households; important schemes implemented by the SC Corporation are: Land Purchase Scheme, Economic Support

Scheme, and Skill Development Programmes. The main objective of the ST Corporation is to provide financial assistance to the poor ST households to take up income-generating activities. The leading schemes of the ST Corporation include: Economic Support Scheme, skill development and placement initiatives, driver empowerment programme, rural transport plan, and entrepreneurship development among youth.

In addition to the regular investments in different social sectors, the Telangana Government has also been implementing several targeted schemes and programmes to enhance the livelihoods of SCs and STs. Economic Support Scheme (ESS) has been the leading intervention in this context. The scheme provides financial assistance for the creation of income generating assets to the poor Scheduled Caste households for their social and economic development. These schemes are being implemented through the Telangana Scheduled Castes Cooperative Development Corporation Ltd (SC Corporation). Since 2014-15, a total of 1,20,383 SC beneficiaries have been assisted under the self-employment scheme and 5,040 SC beneficiaries have been supported under the skill development scheme. A total subsidy of Rs 1,362.47 crore was provided from 2014-15 to November 2019 under the two schemes.

Economic Support Schemes for the tribal households are implemented through ST Corporation (TRICOR) in the priority sectors such as agriculture, minor irrigation, livestock and self-employment. A total subsidy of Rs 425.58 crore has been provided from 2014-15 to November 2019, to 50,205 beneficiaries under ESSs for STs.

Land purchase scheme for SC women is among the flagship programmes of the Government. Under the scheme 3 acres of land is provided to the poor landless women beneficiaries along with irrigation facilities and crop assistance for one crop per year with 100% subsidy. Since its launch in 2014-15, 16,244 acres have been purchased and distributed to 6,493 households, with an investment of Rs 715.39 crore (Figure 10.3).

Figure 10.3 Number of Beneficiaries under Land Purchase Scheme (2014-15 to 2019-20)

With a view to fostering entrepreneurship among the SCs and STs, the Government of Telangana launched a special incentive package scheme under the Telangana State Program for Rapid Incubation of Dalit Entrepreneurs (T-PRIDE) in 2014. The incentive package includes: loans at nominal interest rates, power subsidy, investment subsidy and sales tax exemption. Plans are also on the anvil to train the SC and ST engineering graduates and award them contracts on a reservation basis. During 2019-20, 5,603 units of SC entrepreneurs with an amount of Rs 216.39 crore and 2,870 units of ST entrepreneurs with an amount of Rs 139.13 crore have been provided with financial incentives under the T-PRIDE scheme.

With respect to the targets for attaining the SDG of reducing inequalities, the Telangana Government (Scheduled Castes Development Department) aims to progressively increase the total number of SC beneficiaries under different schemes from the current (2019-20) level of 8,86,531 beneficiaries since the budgetary allocations and releases are projected to increase proportionately from the present level, that is, Rs 12,400.22 crore under the SCSDF. The SC Corporation alone has set a target of 2,11,000 beneficiaries for 2030 with a projected budget of Rs 5,248.75 crore. Likewise, the State Government (Tribal Welfare Department) set a target of 5,79,051 ST beneficiaries for 2030 as against the current (2019-20) achievement of 4,30,226 beneficiaries. This is based on the projections that the available resources will progressively rise to Rs 436.92 crore by 2030

from the current year (2019-20) expenditure of Rs 316.23 crore.

Backward Classes

The Backward Classes account for the largest share of State's population - consisting of 113 communities the BCs make up 52% (1.82 crore) of the State's population. Socio-economic development of these intermediate castes is a prerequisite for attaining the goal of reduced inequalities since this diverse social category consists of many vulnerable and poor households. The benefits of positive discrimination are extended to the BCs as they currently avail 29% reservations in education and employment. They are also given one-third reservation in local government institutions. In terms of resource allocation, the budgetary allocation for BC welfare has increased from Rs 2,172 crore in 2015-16 to Rs 5,918.83 in 2018-19. In 2018-19 budget, the State Government unveiled special schemes for the Most Backward Classes (MBCs) with an allocation of Rs 1,000 crore. With a view to addressing the special development priorities of MBCs, the Most Backward Classes Corporation was established in 2017.

The vision of Government of Telangana is to create an egalitarian society by enhancing the socio-economic status of the poor among the Backward Classes and to eliminate inequalities that prevent the BCs from realizing their full potential. To make headway towards its vision the Government's strategy is to extend financial support to the relatively poor BC households

to enable them to pursue income-generating activities in a sustainable manner leading to their economic and social development. The mandate of the Backward Classes Welfare Department is to bring the Backward Classes socially, educationally, and economically on par with other developed communities in society. The key objectives of the Department include: (1) To enhance access to education and career prospects (2) To eradicate poverty through economic support schemes (3) To reduce inequalities and promote social cohesion.

The Government implements a broad range of schemes and interventions for the welfare of BCs; these include: Pre-matric and post-matric hostels; BC Study Circles to impart free coaching to eligible BC students for different competitive examinations; post-matric scholarships which consist of two components – reimbursement of tuition fee (RTF) and maintenance fee (MTF); Mahatma Jyothiba Phule BC Overseas Vidya Nidhi; incentive scheme for inter-caste married couples; Kalyana Lakshmi scheme; a total of 281 residential schools and colleges for BC students under the management of Telangana BC Welfare Residential Educational Institutions Society; and the establishment of cooperative federations for all major Backward Classes in the State.

The targeted and beneficiary oriented economic development schemes are implemented through the BC Corporation. The mandate of the Corporation is to extend financial assistance for the creation of income-generating assets for the low-income backward caste households, mainly

through economic support and skill development schemes. Currently (2019-20) the number of beneficiaries assisted by the BC Corporation stands at 73,745. And the targets set by the Government for the three milestones are: 2,09,967 (2022-23), 2,34,134 (2025-26), and 2,59,317 (2030-31). The Corporation made an investment of Rs 1,024.13 crore in the base year (2019-20). And the corresponding investment targets fixed for the short-term, the medium-term and the end-term are Rs 2,602.29 crore, Rs 3,356.51 crore, and Rs 4,026.66 crore respectively.

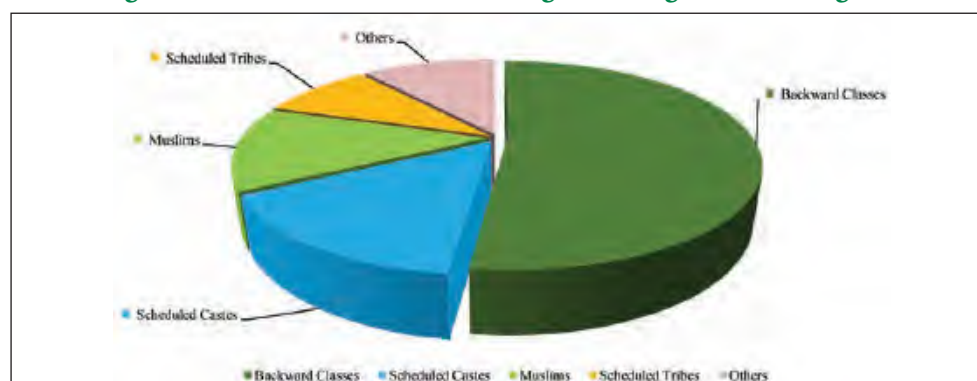
Under its flagship Economic Support Scheme alone, the BC Corporation has drawn up an action plan to approve 38,457 fully subsidized income generating assets in 2022 with an investment of Rs 192.29 crore (see table below). The BC Corporation set a target of sanctioning 42,303 units by 2025 – increasing 10% beneficiaries each year - with an investment of Rs 211.51 crore. By the SDG target year 2030, the Corporation plans to raise the number of beneficiaries to 46,533 by investing an amount of Rs 232.66 crore.

Table 10.3 BC Corporation's Action Plan to Achieve the Vision in the Next 10 Years

Description	Year 2022	Year 2025	Year 2030
Physical Target	38,457	42,303	46,533
Financial Target (Rs in crore)	192.29	211.51	232.66

Source: SDG vision document, BC Welfare Department, Government of Telangana

Figure 10.4 Distribution of Socio-religious Categories in Telangana*



*Percentages are rounded

It may be recalled here that with a view to making the government welfare interventions for the Backward Classes more inclusive, in 2015 the Telangana Government (Backward Classes Welfare Department) enhanced the annual household income limit for eligibility from Rs 60,000 to Rs 1,50,000 in rural areas and from Rs 75,000 to Rs 2,00,000 in urban areas for different welfare schemes and programmes implemented by the Backward Classes Welfare Department (BCWD) from the financial year 2015-16. The revised income eligibility criterion was made uniform across the schemes and programmes implemented by the BCWD.

Representation of Women and Vulnerable Social Groups in Elected Bodies

India's social stratification is characterized by the preponderance of historically disadvantaged communities who make up at least three-fourths of the population. And Telangana State is no exception to this. The vulnerable and poorer social groups have been officially designated as – Scheduled Castes (SCs), Scheduled Tribes (STs) and Backward Classes (BCs). Given their numerical predominance, equality cannot be achieved without giving adequate representation

to them in elected bodies at different levels. To achieve adequate representation to the vulnerable persons, both the Central and State Governments have provided statutory reservations for these social groups.

As part of its vision, the Government of Telangana has accorded due priority for the political inclusion and empowerment of the marginalised social groups. In this context the Panchayati Raj Institutions (PRIs), which function at the grassroots level providing essential services to the citizens, assume great significance owing to their spread and the impact. In accordance with the Constitutional mandate, the Telangana Government has provided adequate reservations to the marginalised groups – subject to the ceiling prescribed by the judiciary. Currently more than a half (50.4%) of the elected positions are occupied by the persons from the vulnerable segments of the State. Even at the Assembly (MLAs) and Parliament (MPs) levels too, proportional representation is accorded to the SCs and the STs; however, a higher representation needs to be provided to the BCs in order to achieve greater degree of equality in the context of the SDGs (Table 10.4).

Table 10.4 Proportion of Persons from Vulnerable Groups in Elected Bodies (PRIs)

Designation	Number of Elected Representatives				% to the total strength		
	SCs	STs	BCs	Total	SCs	STs	BCs
Ward Member	18282	25608	12782	1,13,344	16.12	22.59	11.27
Sarpanches	2112	3094	1169	12751	16.56	24.26	9.16
MPTCs	1585	1610	286	5817	27.24	27.67	4.91
ZPTCs	94	79	95	536	17.53	14.73	17.72
MPPs	98	92	77	534	18.35	17.22	14.41
Chairpersons	4	6	6	32	12.50	18.75	18.75
Total	22175	30489	14129	1,33,014			

Source: Vision Document of Panchayati Raj Department, Government of Telangana (2020)

Women constitute a half of the State's population. Economic and human development indicators reveal that men are ahead of women, despite the rapid strides made over the years in bridging the gender gaps in several domains such as sex ratio, school enrolment and dropout rates and work

participation rates. Bridging the gender gap calls for a multi-pronged strategy. Acknowledging the imperative the Telangana Government has formulated a broad range of initiatives for attaining gender parity and empowerment of women.

In 2019 the Government of Telangana framed rules, that is, “The Telangana Municipalities (Reservation of seats in Municipal Corporations and Municipal Councils) Rules, 2019”, under which seats/wards in Municipalities are reserved for Scheduled Castes and Scheduled Tribes in proportion to their population in the respective Municipalities. And the remaining wards will be reserved for Backward Classes subject to the ceiling of 50% of the total wards. Regarding women the GO provides that 50% of the seats reserved for STs, SCs and BCs shall be reserved for women belonging to these categories; further, out of the total number seats, 50% of the seats shall be reserved for women in the Municipality (including the seats reserved for women belonging to STs, SCs and BCs). Similarly, in 2020 the State Government amended the GHMC Act to provide 50% reservation for women in the Greater Hyderabad Municipal Corporation.

Acting on its vision for Telangana, the State Government endorsed the 108th Constitutional Amendment (Women Reservation) Bill which provides 33% reservation for women in the Parliament and State legislatures (the Bill is yet to be passed by the Lok Sabha). In the Urban Local Bodies (ULBs) of the State, women representatives occupy more than a half of the positions (54%). Out of the total 3,370 elected representatives of 139 ULBs, 1,820 are women and 1,550 are men. Political empowerment of women has been extended to rural local governments as well. As per the Panchayati Raj Act 2018 of the State Government, 50% reservations have been provided for women in Panchayat Raj Institutions (PRIs). Accordingly, 50.74%, that is, 67,486 elected representatives of PRIs in the State are women. Furthermore, in a first in the country, 33% reservation is extended to women in the Market Committees.

Budgetary allocations for women and child well-being have also been enhanced - from Rs 1,552 crore in 2016-17 to Rs 1,799 crore in 2018-19. Among the major schemes that are under implementation by the Telangana Government for the welfare of

women include: Provision of KCR Kit worth Rs 15,000 for the wellness of the mother and neonate; *Arogya Laxmi* scheme providing a nutritious full-meal to pregnant and lactating women and infants every day through 35,700 Anganwadi Centres; Deepam Scheme now aims to universalise the LPG connection to make Telangana “kerosene-free state”; *Stree Nidhi* programme provides interest-free loans to women’s SHGs; and *Sakhi* one-stop service centres for victims of violence across the State.

Welfare of Minorities

The Telangana Government has taken several proactive initiatives for the twin goals of – addressing the well-being challenges confronted by the minorities and bridging the development gaps between the minorities and other communities towards achieving the broader goal of equality among different social and religious groups. Muslims are by far the largest minority community in Telangana comprising 12.7% of the State’s population (2011 Census). Muslims make up 97.82% of the minority population in the State; the other minorities are: Christians, Sikhs, Buddhists, Jains and Parsis.

In addition to a broad range of interventions in the domains of education, social protection and cultural promotion, the Telangana Government’s vision for the minorities includes initiatives for their accelerated economic upliftment which are implemented through the Telangana State Minorities Finance Corporation. Minorities’ welfare has received increased budgetary allocations over the years; and to provide greater representation for the minorities in education and employment sectors the State Assembly has passed a bill paving the way for providing 12% reservation for minorities. The leading targeted schemes include the Economic Support Scheme (ESS) and vocational skilling and placement programme. Under the ESS financial support is extended to the eligible beneficiaries to start income-generating activities in the identified sectors.

The vision of the Telangana Government for the well-being of minorities aims at: extending financial assistance by way of subsidy with bank linkage to the eligible unemployed members of the minority communities (mainly through the ESSs); empowerment of women; upgradation of technical and entrepreneurial skills of minorities towards various job-oriented skills/trades leading to self and wage employment; and to build confidence among minorities and make them the key stakeholders in nation building.

The current (2019-20) number of targeted beneficiaries under the Minorities Welfare Department is 38,445. The State Government has set beneficiary targets for the three milestones culminating in 2030; these are: 60,331 (2022-23), 68,128 (2025-26), and 78,512 (2030-31). For the current year (2019-20) the Minorities Welfare Department has invested an amount of Rs 434.77 crore for providing support to 38,445 beneficiaries. And the required resources for the three milestones are Rs 744.52 crore, Rs 850.92 crore and Rs 966.44 crore respectively.

Poverty and Backwardness among Socio-Religious Categories

In the context of inequality, understanding the disparities between different social and religious categories is important as such groups are easy to identify and covered under government schemes and interventions. Broad trends in the available data⁷¹ (i.e. estimates/projections based on NSS data up to 2015) on the incidence of poverty among social groups in Telangana show that: (1) Over the years, poverty levels have substantially declined. (2) The differences in poverty levels between social groups persist, although the inter-social group differences in poverty levels have narrowed down over the years. (3) The Scheduled Castes and Tribes have higher levels of poverty, followed by Backward Castes; and Others Category has the lowest levels. (4) The poverty levels are lower in urban areas for all social groups.

More recent data presented in the table below also indicate that the SCs and STs remain the most backward or deprived in Telangana, followed by the OBCs among Muslims and Hindus. Conversely, the others category is relatively most developed (that is, least backward or deprived) (Table 10.5).

Table 10.5 Index of Backwardness according to Socio-religious Categories in Telangana (2017)

	Overall deprivation level*			
	Group Consensus/ Delphi Method	Quintile Method	Group value divided by the Mean Method	Final Index Scores Average (of Col 2 to 4)
1	2	3	4	5
Hindu-SCs/STs	83.0	84.1	81.3	82.8
Muslim-OBCs	68.2	70.5	69.6	69.4
Hindu-OBCs	54.5	51.1	45.0	50.2
Muslim-Others	43.3	40.9	53.5	45.9
Others (all)	20.5	19.3	21.7	20.5

*Normalized score in the scale between 0 and 100 using UNDP methodology (0 and 100 indicating no deprivation and maximum level of deprivation)

Source: First Report on Enhancement of Reservations for Certain SEBCs, Telangana State Commission for Backward Classes, 2017.

71 Millennium Development Goals in Telangana: A Precursor to SDGs, CESS/Government of Telangana, 2015.

10.3 The Way Forward

The impressive gains made in reducing poverty and inequalities in the State over the past six years can be further consolidated to realize the State vision and to attain the national and international goals. However, the following areas deserve greater policy attention:

1. Since the strategy for attaining the SDG 10 (reduced inequalities) aims at targeted interventions, availability of resources and timely and regular release of budget would be critical.
2. The release and utilization of funds under the SC and the ST Special Development Funds has steadily improved over the years. All the Departments involved in the implementation of the Funds are taking the necessary initiatives to bridge the gaps in making funds utilization 100%.
3. One of the major challenges encountered by policymakers in designing interventions to reduce inequalities is the absence of disaggregated data. While considerable headway has been made over the years, there is a great deal of scope for improving the statistical capacity in making datasets available at the State and sub-State levels that are disaggregated by gender, social category, income levels, religion and geography. The Government of Telangana has initiated steps in this direction.
4. The Government is moving in the right direction to extend higher representation to BCs in the elected bodies at different levels.
5. The guidelines and the implementation protocols and requirements of schemes targeted at the vulnerable sections—STs and SCs in particular—need to be made more flexible and adaptive to make the implementation process smoother and quicker to realise accelerated reduction in inequalities. The State Government has positively responded to this priority and it has initiated the process.
6. In order to make the targeting of beneficiaries under anti-poverty interventions more scientific and effective, the State Government has started prioritising the districts/mandals with high concentration of vulnerable and poorer sections.
7. With the reorganisation of the erstwhile districts into 33 new districts in the State, the key administrative units have become smaller and better governable. It is now easier to concentrate efforts on the underdeveloped districts in order to redress regional imbalances and achieve the goal of balanced development.
8. Reducing poverty and inequalities requires greater coordination and convergence across several related Departments. The Government of Telangana has already initiated the required steps in this direction.

Annexure 10.1 SDG Targets and Indicators

State indicator No	Indicators	Status in 2019-20 (baseline value)	Target 2022-23	Target 2025-26	Target 2030-31
10.1.1.1	Share of bottom 20% in the total consumption in the State	10.7%; 8.5%			
10.1.1.2	Proportion of SCs and STs in the bottom 20% of the State population	42%; 26%			
10.2.2.1	Percentage of seats held by women in Urban Local Bodies	54%			
10. 2.3.1	Allocation of budget under the SCSDf (Rs crore)	12400.22			
10. 2.3.2	Allocation of budget under the STSDF (Rs crore)	7184.87	10748.41	13972.93	18164.8
10. 2.3.3	Expenditure under the SCSDf (Rs crore)	10250.79 (83%)	100%	100%	100%
10. 2.3.4	Expenditure under the STSDF (Rs crore)	6357.84 (89%)	9889.00 (100%)	13134.55 (100%)	17438.21 (100%)
10. 2.3.5	Number of beneficiaries assisted under BC Welfare	73645	209967	234134	259317
10. 2.3.6	Amount released for beneficiaries under BC Welfare (Rs crore)	1024.13	2602.29	3356.51	4026.66
10. 2.3.7	Number of beneficiaries assisted under Minorities Welfare	38445	60331	68128	78512
10. 2.3.8	Amount released for beneficiaries under Minorities Welfare (Rs crore)	434.77	744.52	850.92	966.44
10. 2.3.9	Number of beneficiaries assisted under SC Welfare	886531	As per target	As per target	As per target
10. 2.3.10	Amount released for beneficiaries under SC Welfare (Rs crore)	2580.12	As per allocation	As per allocation	As per allocation
10. 2.3.11	Number of beneficiaries assisted under ST Welfare	430226	473344	522209	579051
10. 2.3.12	Amount released for beneficiaries under ST Welfare (Rs crore)	316.23	350.7	389.08	436.92

Sustainable Development Goal - 11

Making Cities & Communities Safer, More Inclusive and Resilient



Vision

The vision for Telangana state on SDG 11 is to make cities and human settlements safe, sustainable, inclusive, and resilient. The goal is to design urban areas in a way that fosters equality, environmental sustainability, and economic growth. Now to some of the targets to realise the state's Vision are: ensuring access to adequate housing and basic services for all people, ensuring accessible and sustainable urbanisation and transport, safeguarding the world's cultural and natural heritage and reducing the negative environmental impacts of cities, including outdoor air pollution

Achievements

- The score of Telangana State is 62 and is categorised as the Performer according to the SDG India Index Report 2019-20. In the category of Performers, Telangana stands at the top for SDG 11.
- For the decade of 2001-11, the annual compound growth rate of urban population of Telangana State was 3.23 percent, which was higher than that of the national average of 2.76 percent during the same period.
- At the district level, while Hyderabad is a 100 percent urbanised district, the surrounding Rangareddy district is 70.22 percent urban.
- Hyderabad is recognised as one of India's leading global IT hubs. There are over 1500 IT/ITeS companies, which together employ over 5.4 lakh professionals, besides providing indirect employment to over 7 lakh people. Telangana contributes to over 11% of the country's IT exports and Hyderabad ranks 2nd in terms of total revenues from the IT sector.

- Due to the growing importance of Hyderabad city, the air traffic has increased significantly over the years.
- The density of notified national highways in Telangana is 3.41 km/100 sq kms against the national average of 4.01 km/100 sq km.
- As per census 2011, 91.62 percent of urban households in Telangana have access to toilets. Open defecation in Urban Local Bodies is 8.38 percent.
- In 2018-19, with respect to provision of double bedroom houses, about 12,043 units were completed, and the number went up to 16,688 in 2019-20
- During last five years the HMDA (Urban Forestry) has achieved planting of 117.93 Lakhs on its own and 47.30 Lakhs planted in HMDA layouts.
- The State has 79.98 percent of households in urban areas with access to tap water from a treated source for drinking purpose.
- As per census 2011, 91.62 percent of urban households in Telangana have access to toilets. Open defecation in Urban Local Bodies is 8.38 percent.

Challenges

The expansion of cities without matching infrastructure, other related services may become a hurdle in creating better cities. The air pollution created by the expansion of cities would pose a serious health hazard to the citizens. Solid waste management is yet another challenge in terms of environmental damage that it creates if not managed in an efficient way. Another major challenge is development of smart cities and towns in the tier II and tier III districts.

11.1 The Context

Rapidly Urbanising Telangana

The process of urbanisation is an ongoing phenomenon. As countries move from primarily agrarian economies to industrial and service sectors, urbanisation levels also increase. At the global level, about 80 percent of the world's Gross Domestic Product (GDP) is being generated in urban areas. In India, urban areas contribute about two-thirds to the GDP. The link between urbanisation and per capita income has grown stronger over the years. As economies grow, industries and services get concentrated in urban areas where these sectors grow more rapidly than others because economies of scale in cities reduce transaction costs. High densities of population in cities also allow the firms to benefit from workers with different skills for specific needs (Kundu, 2014).

The level of urbanisation in India, i.e., increase in the proportion of urban population in the total population, stood at 31.16 percent in 2011 which is considered moderate. It was 27.78 percent in 2001 and 23.3 percent in 1981. The annual growth rate of urban population in India was 2.76 percent during 2001-11, 2.74 percent during 1991-2001 and 3.1 percent during 1981-91.

11.2 SDG-11 Targets and Indicators

Racing Urbanisation in Telangana

The State of Telangana is one of the fast-urbanising states in the country. Though Telangana state was formed in June 2014, a calculation of the state's urbanisation trends show that about 38.6 percent of its population were in urban areas in 2011 compared to 31.8 percent in 2001. In 2016-17, this was projected to be 42 percent and is expected to reach 50 percent in the next five years (MA&UD, 2020). As an absolute number, 13.68 million people were living in urban areas in 2011.

For the decade of 2001-11, the annual compound growth rate of urban population of Telangana state was 3.23 percent, which was higher than that of the national average of 2.76 percent during the same period.

At the district level,⁷² while Hyderabad is a 100 percent urbanised district, the surrounding Rangareddy district is 70.22 percent urban. On the other hand, the erstwhile districts of Mahabubnagar (15.0 percent) and Nalgonda (19.0 percent) depict very low levels of urbanisation. In Telangana state, there are 158 urban centres with 4 Municipal Corporations, 35 Municipalities, 116 Census Towns, 2 Nagar Panchayat, and 1 Cantonment Board in the state as per 2011 census. As per the Socio-economic Outlook 2020, there are 73 urban local bodies in Telangana, consisting of 6 municipal corporations, 42 municipalities and 25 nagar panchayats. The six municipal corporations are: Hyderabad, Warangal, Nizamabad, Ramagundam, Karimnagar and Khammam. As per the Socio-economic Outlook, 2020 for Telangana state, there are 141 ULBs in the state out of which 97 ULBs comes under the purview of the Telangana Town Planning Act, 1920, and remaining 44 ULBs covered under the purview of Urban Development Authorities (UDAs).

Hyderabad – An Emerging Global City

An important aspect of the urbanization scenario in Telangana is the overwhelming dominance (primacy) of Hyderabad city on the urban landscape. With a history of 400 years, it is one of the oldest cities in the country. In April 2007 the erstwhile MCH (172 sq.km) was enlarged to Greater Hyderabad Municipal Corporation (GHMC) with an area of 658 sq.km. Twelve municipalities from Rangareddy and Medak districts that were surrounding the MCH were merged to form the GHMC. In August 2008, the Hyderabad Urban Development Authority

⁷² As per old districts. The Telangana state government has created a total of 33 districts during 2016-19, 31 districts in 2016 and 2 more in 2019. There were 11 districts earlier. In the present text, any reference to a district should be read as those before new districts were created.

(HUDA) with 1865 sq.km of area was replaced by Hyderabad Metropolitan Development Authority (HMDA) with an area of 6856 sq. km. The Jurisdiction of HMDA covers 54 revenue mandals (administrative blocks) in five districts of Hyderabad, Medak, Rangareddy, Mahabubnagar and Nalgonda. As many as 849 villages of four districts were brought into the jurisdiction of the HMDA, which is now considered as the second largest metropolitan area in India after Delhi (Ramachandraiah, 2014). In 2013, the GHMC area was further expanded to 922 sq.km after merging 35 villages. The GHMC's is spread in three districts of Hyderabad, Rangareddy and Medak and had an estimated population of 7.17 million in 2013 (11th Metropolis World Congress, Hyderabad, *Cities for All*, 2014). Hyderabad city (assuming the area of GHMC as one entity) dominates the urban settlement pattern. It is ten times bigger than the next city, Warangal, in the state. Hyderabad accounts for about 70 percent of the total urban population in Telangana.

IT/ITES Sector

Hyderabad is now recognised as one of India's leading global IT hubs. There are over 1500 IT/ITeS companies, which together employ over 5.4 lakh professionals, besides providing indirect employment to over 7 lakh people. Telangana contributes to over 11% of the country's IT exports and Hyderabad ranks 2nd in terms of total revenues from the IT sector. The government has been promoting IT and ITeS units in Tier-II cities. The IT Incubation Centre (Phase-I) in Warangal has been operational since February 2016, more such centres are coming up in Khammam, Karimnagar and Nizamabad.

The government has launched the ICT Policy to augment growth in the IT/ITeS sector and to attract new investments and employment generation. The T-Hub is India's largest incubator for start-ups and a unique public-private partnership between the Government of Telangana, IIIT-Hyderabad, ISB and NALSAR on one the hand and the private sector on the other.

Rajiv Gandhi International Airport at Shamshabad

Hyderabad city has connectivity by air to many cities in India and to several global destinations.

The Rajiv Gandhi International Airport (RGIA) began operations since 22 March 2008 from Shamshabad, about 40 km from the city, on the Bangalore highway. The new airport is located in a 5500 acre area and is owned by GMR Group under public private partnership. The air connectivity and passenger traffic, domestic and international, expanded significantly from the late 1990s from the numbers handled by the Begumpet airport earlier. Due to the growing importance of Hyderabad city, the air traffic has increased significantly over the years.

Hyderabad Metro Rail

Hyderabad metro rail was taken up under public private partnership (PPP) mode with L&T company in three corridors: 1. Miyapur-L.B.Nagar, 2. Jubilee Bus Station-Falaknuma, and 3. Nagole-Shilparamam. The works began in July 2012. A 30-km network in two corridors (13 km from Nagole to Ameerpet, and 17 km from Miyapur to Ameerpet) was inaugurated by Prime Minister, Narendra Modi on 28 November 2017. The remaining 16 km stretch from Ameerpet-LB Nagar (on corridor 1) was opened for public on 24 September 2018. The Ameerpet-Hi-Tec City part of the Nagole-Hi-Tec City corridor was inaugurated on 27 March 2019. The Hi-tech City-Rayadurgam stretch on corridor 3 was inaugurated on 28 November 2019. A 11-km stretch between JBS- MGBS of corridor 2 (JBS-Falaknuma) was inaugurated by Chief Minister of Telangana, K. Chandrasekhar Rao, on 7 February 2020. With this the total operational length of the Hyderabad Metro is 69 kilometres in three corridors.

Outer Ring Road (ORR)

The ORR, named as Nehru Outer Ring Road, is an 8-lane express highway encircling the metropolitan city of Hyderabad with a length of 158 km. It has a total of 19 access points, and has 316 km of service roads. Opened to the public in different

phases, almost the entire stretch was brought into operation in July 2016. To provide improved connectivity between Inner Ring Road and Outer Ring Road, 33 Radial Roads have been identified for improvement.

Regional Ring Road (RRR)

The Government of Telangana has plans to construct a Regional Ring Road (RRR) of 292 km in the near future.

MMTS

The Multi-Modal Transport System (MMTS) was introduced in 2003 with two lines: Lingampally–Hyderabad and Lingampally– Falaknuma via Secunderabad. The total length of the MMTS network is 40 km. This is called the Phase I. Passenger trains run on the existing railway tracks. Phase II of MMTS involving about 84-km of railway network is in different stages of construction. This network is spread in different sectors: between Sanathnagar- Moulali, Moulali-Ghatkesar, Tellapur – Ramachandrapuram, Medchal – Bolarum – Secunderabad and Falaknuma – Umdanagar – Shamshabad Airport etc.

TSRTC

The city region of the Telangana State Road Transport Corporation (TSRTC) runs over 3000 buses in the city and the outskirts. The city buses provide the backbone of public transportation in Hyderabad by carrying about 30 lakh passengers every day.

At the state level also, TSRTC continued to provide well-coordinated bus services and operates about 10,460 buses from 97 Depots and carry 100.03 lakhs people to their destinations every day. There are 364 bus stations in the State. It has over 50000 employees. They connect 9377/844 villages/hamlets to all major towns and cities. The Corporation's buses also ply to important towns and cities in the neighbouring states of Andhra Pradesh, Karnataka, Maharashtra, Goa, Odisha, Chhattisgarh and Tamil Nadu.

Smart Cities

Under the Smart City Mission, the Government of India has selected 100 smart cities in the country in a multi-phase competition process. Warangal and Karimnagar cities in Telangana have been selected for this. Warangal and Karimnagar have initiated 140 projects worth Rs.4135 crore. Of these, 66 are in DPR stage, 16 in procurement, 36 in construction stage and 9 projects have commenced operations. Warangal Smart City Corporation Limited and Karimnagar Smart City Corporation Limited were incorporated as a Companies under the Companies Act, 2013 and registered with the Registrar of Companies, Hyderabad.

Regional Airports

The Telangana government is planning to build three brownfield and three greenfield airports across the State. The six airports proposed are at Warangal, Adilabad, Jakranpally (Nizamabad), Bhadradi-Kothagudem, Basanth Nagar (Ramagundam) and Devarkadra (Mahbubnagar). The government is seeking help from the Airports Authority of India (AAI) in this regard.

Warangal Airport

Warangal Airport, built at Mamnoon in Warangal district in 1930, was the largest airport in the country at the time. It was commissioned by the last Nizam, Mir Osman Ali Khan. Several Prime Ministers and Presidents have landed at the airport until 1981. During the Indo-China war, it served as a hangar for government aircraft due to Delhi airport being a target in combat. Many cargo services and Vayudoot services have also used it as their hub. It had 1875 acres in land, a 2 km runway, a pilot and staff quarters, a pilot training centre and more than one terminal. The airport was built to benefit the paper industry at Sirpur Kagaznagar, and Azam Zahi mills, Warangal and it remained in service till 1981. At present, the airport is being used as NCC Training Centre. The State Government is keen on developing this airport.

Ramagundam Airport

Ramagundam Airport is located at Kesoram Cement Factory, Basanth Nagar. The airstrip, spread over 294 acres, was used by the founders of the cement factory. Vayudoot, a subsidiary of Air India and Indian Airlines, used to operate flights here. After the closure of Vayudoot, it has not been in regular use. A team of officials from the AAI visited the area to inspect the existing airstrip.

Nizamabad Airport

Nizamabad Airport is a proposed greenfield airport at Jakranpalli, 30 kilometres east of Nizamabad. The AAI has inspected the 1,200 acre site and gave its approval for the site in June 2013 but asked for a total of 1,500 acres to accommodate all the necessary airport infrastructure. As of now, development of this airport is on hold.

Nadirgul Airport

Nadirgul Airport is located 12 km South-East of Hyderabad on the Nagarjuna Sagar Highway. This airfield primarily supports pilot training. The Andhra Pradesh Flying Club (APFC), Flytech Aviation Academy and the Rajiv Gandhi Aviation Academy (RGAA) use this field to train pilots.

Extensive Road Network

There are 23 National Highways, covering a length of 3,824 kms criss-crossing the state. Out of this, 1,526 kms are with the National Highways Authority of India (NHAI). The density of notified national highways in Telangana is 3.41 km/100 sq kms against the national average of 4.01 km/100 sq km. Further, the Ministry of Road Transport & Highways has approved for declaration of 13 state roads as New National Highways for a length of 1767 kms. It is estimated that the road transport carries more than 80 percent of the goods and passenger traffic. Over the years several of the National Highways have been widened from two to four and six lanes, and a system of collecting

tolls installed at several places. Private agencies have increasingly taken over the widening, maintenance and collection of tolls on the NHs.

Water, Housing and Sanitation

The Central Public Health Environmental Engineering Organisation (CPHEEO), Government of India, has prescribed the following norms:

- 40 lpcd (litres per capita per day) in case of public stand posts,
- 70 lpcd in case of towns without underground drainage,
- 135 lpcd in case of towns with underground sewerage system, and
- 150 lpcd in case of metropolitan cities having population more than one million.

The state has 79.98 percent of households in urban areas with access to tap water from a treated source for drinking purpose. In 34 ULBs, the supply is between 70 to 135 lpcd while 34 ULBs are supplying less than 70 lpcd. Urban water supply is beset with the problems like inadequacy, high levels of nonrevenue water, low level of metering, intermittent supply, inadequate quality, low sustainability etc.

The National Urban Sanitation Policy (2008) stipulates that each state should formulate its own Sanitation Strategy & each city to develop a City Sanitation Plan (CSP) as a city level instrument for sanitation sector planning. The Telangana State Sanitation Strategy (SSS) is a major fillip in this direction.

The Vision of the Telangana SSS is to have “All cities and towns to become totally clean, sanitized, healthy, liveable, with a special focus on hygienic and affordable sanitation for the urban poor and women”.

Table 11.1 Target Dimensions

Sl. No.	Target	National Indicator	State Indicator (SIF)	Data Point Position	Achievement 2019-20	Target 2022-23	Target for 2025-26	Target for 2030-31
1	11.1	11.1.2. Percentage of Slum Area Covered with basic Services	Setup of Health care centres (Basthi Dawakhana)	167 in Hyderabad city	197	300		
2	11.1	Proportion of urban population living in slums, informal settlements.	Proportion of urban population living in slums, informal settlements.		18.05 lakhs (27% of total population) in 1466 slums (Hyderabad)			
3	11.1	Proportion of urban population living in slums, informal settlements with inadequate housing	Proportion of urban population living in slums, informal settlements or inadequate housing		1.80 lakhs 2BHK houses under construction in GHMC	100% (Completion of 2BHK houses in GHMC)		

Source : UNDP, State indicator framework

As per census 2011, 91.62 percent of urban households in Telangana have access to toilets. Open defecation in Urban Local Bodies is 8.38 percent. Some studies suggest that 15.7 percent of the urban households cannot afford to have a toilet in their homes. About 57.07 percent of Telangana urban population is connected to Piped Sewerage networks (Under Ground Drainage-UGD) with 98.5 percent in Hyderabad. State Level Sanitation Committee (SLSC) was set up to provide strategic guidance for the preparation and operationalizing the State Sanitation Strategy. City Sanitation Plans (CSPs) were prepared as a supplementary tool to City Development Plans (CDPs) and Master Plans on Land Use.

The government proposes to promote sanitary practices and hygiene behavioural changes, and improve and increase safe sanitation facilities to households in the near future. Measures will

be taken to ensure adequate availability and 100 percent upkeep and management of public sanitation facilities to cater to migrant and floating population and community toilets for urban poor – with the aim of ridding urban centres of open defecation and accompanying environmental hazards. Setting up a State Mission on Urban Sanitation and State level Nodal Agency on Urban Sanitation (SNUS), and City Sanitation Task Force are high on priority list of the government. A dedicated State Urban Sanitation Fund (SUSF) will be created. The Telangana SSS recognizes providing primacy to integral solutions that covers sub sectors of solid waste, waste water (including septage), storm water drainage and drinking water. The aspect of sustainability is at the core of the strategy.

Twenty seven percent of the population in GHMC is estimated to be living in slums. The Government

of Telangana has enhanced spending on housing, increasing from 173 Crore in 2016-17 to 2154 Crore (till Jan 2020) for 2019-20. Provision of double bedroom housing with 100% subsidy is one of the flagship programmes of the government with a view to provide dignity to the poor. There is no contribution from the beneficiary under this scheme. The scheme provides 560 Sft. plinth area houses to the houseless BPL families in a phased manner. Each house will have two bedrooms, a kitchen, a hall and two bath-cum-toilets (one attached and one common) in rural and urban areas. In 2018-19 about 12,043 units were completed, and the number went up to 16,688 in 2019-20 (till January 2020). The government intends to complete 80,960 units in 2020-21 and 53,796 units in 2021-22. Currently, 28 Shelter for Urban Homeless (SUH) are functioning in the state, with an occupancy to 1,312 people.

Development Plans and Solid Waste

Master Plans have been sanctioned for 32 ULBs and land use plans have been prepared for 27 ULBs. GIS Base Maps has been completed for 37 ULBs to assist the ULBs in strategic planning and resource utilization, and management of day-to-day operations. The Municipalities Act 2019 has created a solid ground for planned development of ULBs in the state of Telangana.

The total municipal solid waste generated in the 73 ULBs of Telangana is 66287 tonnes per day including the GHMC. Of this, 4000 tonnes per day is collected, and 3040 tonnes per day treated and while the remaining is disposed. Waste collected from door-to-door should be source segregated and collected separately in wet and dry waste from all sources. Waste should be handled mechanically with minimum human contact. All ULBs will be

encouraged to set up centralized or decentralized processing facilities for treatment of the solid waste generated in the ULBs. Efforts will be made for setting up regional/district level landfill facilities by clustering ULBs for scientific landfilling.

Growth of greenery and enhanced green cover in the state in the last few years under the flagship programme “Telangana Ku Haritha Haram” will be significantly contributing to the decline in suspended particulate matter in the state. During last five years the HMDA (Urban Forestry) has achieved planting of 117.93 Lakhs on its own and 47.30 Lakhs planted in HMDA layouts. HMDA also distributed 325.0 Lakhs seedlings to various organizations. In 2020, the entire Railway Corridor was planted with multi row Avenue Plantation to form a “Garland of greenery around Hyderabad City”. Avenue plantations were taken up on both sides of service roads of ORR in entire 158 km except in stony hillocks or waterlogged areas.

In addition to the above, Hyderabad has three notified National Parks to conserve the native flora and fauna in the Urban Landscape. The three National Parks viz., KBR (Kasu Brahmananda Reddy) National Park, Mahaveer Harina Vanasthali National Park and Mrugavani National Park at Chilkur have a combined area of over 5000 acres of forest landscape solely for the purpose of conserving the flora, fauna and the rock formations which are the pride of the Deccan Plateau Region. All the three National Parks are well protected and are managed with least disturbance to the ecological system. Two more nature Parks have been added to Hyderabad i.e., Bhagyanagar Nandana Vanam at Narepally and Sanjeevini Smrithi Vanam at Gurranguda.

Table 11.2 National and State Indicators

Sl. No.	Target	National Indicator	State Indicator (SIF)	Data Point Position	Achievement 2019-20	Target 2022-23	Target for 2025-26	Target for 2030-31
1	11.3	11.3.1. Proportion of cities with integrated development plans.	Proportion of cities with integrated development plans.		37 ULBs	57	75	100%
2	11.3	11.3.2. Share of Mixed Land Use Area in overall city land use	Share of Mixed Land Use Area in overall city land use		8	30	75	100
3	11.6	11.6.1. Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated by cities.	No. of ULBs Collecting, Transporting and processing of solid Waste		81	100	100	100
4	11.6	11.6.1. Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated by cities.	Solid Waste Collection, Transportation and Processing (in GHMC area) (PERCENT)		100	100	100	100
5	11.6	11.6.2. Annual mean levels of fine particulate matter (Eg. PM2.5 and PMK10) in cities	Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)	Direct Value	Annexure ?	10% reduction based on base year 2017	20% reduction based on base year 2017	30% reduction based on base year 2017
6	11.6	11.6.3. No. of days the levels of fine particulate matter (Eg. PM2.5 and PMK10) above mean level	11.6.3. No. of days the levels of fine particulate matter (Eg. PM2.5 and PMK10) above mean level	Direct Value	Annexure ?			
7	11.7	11.7.1. Per capita availability of Green Spaces (In GHMCs)		100 crore saplings planted in last 4 years				
8	11.7	Area of a City/ULB That Consists of Greenspace (Sq m)	Per capita availability of Green Spaces	2, 10, 74, 407 (Sq Mts) 76,84,800 (Population)	Around 3Sq.M / Person	4	6	8
9	11.7	Setup and maintenance of municipal nurseries	Setup and maintenance of municipal nurseries	178 existing nurseries / 544 required	32	40	65	100
10	11.7	Total Green Cover in ULBs	Total Green Cover in ULBs	2,107 HA / 3,28,813 Ha	Around 1%	1.5	3	5
11		Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment	Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment	Direct Value	1114200	1289825.4 (@ of 5% increase per year)	1493134	1905659.6

Sl. No.	Target	National Indicator	State Indicator (SIF)	Data Point Position	Achievement 2019-20	Target 2022-23	Target for 2025-26	Target for 2030-31
12		New Internal CC Roads Constructed (km)			23746			
13		Solid Waste Treated (MT)	Quantity of Waste being treated		40% Total waste processed: 1415 TPD in 139 ULBs Total waste generated: 3500 TPD	100	100	100

Source : UNDP, State indicator framework

There are 2642 hazardous waste generating units in the state. In 2017-18 these units generated a total of 527313 metric tons of hazardous wastes in the categories of Landfillable-207196; Incinerable-117427; Recyclable-137191; and Utilisable-65499. There is one Treatment Storage & Disposal Facility (TSDF) for hazardous waste at Dundigal, Rangareddy District which has one incinerator of capacity 1.5 TPH and engineered landfill facility. The industries are sending the high calorific value hazardous waste to cement industries for co-processing as alternative fuel. There are about 25 Hazardous Waste recycling units operating in the State.

11.3 The Way Forward

As cities are growing faster than housing, infrastructure, and services, there are chances of emergence of slum like conditions. We need to watch out for these and take preventive measures. Now, cities increasingly are assuming dangerously high levels of air pollution, which can pose a major health risk to citizens. This is a challenge that needs to be taken head on. Solid waste management presents the biggest environmental challenges in the cities, and equally so in cities of Telangana. The strong need is to sustain progress on all these aspects, and strictly adhere to the SDG 11, that aims to provide basic services, energy, housing and transport;

reduce resource use and environmental impact and make cities more resilient. For this, Telangana needs to invest in public transportation, invest in parks and green spaces, create frameworks for zero emissions and invest in research and development of new products and services.

Briefly Telangana has already launched the Prime Minister Awas Yojana (PMAY Urban) to provide housing to urban homeless, taken steps to reduce air pollution, increased use of solar and wind energy and recycled and banned use of plastic bags.

Some of the SDG Targets

Safe and Affordable Transportation

By 2030, provide safe, affordable, and accessible transportation systems for everyone. This includes expanding public transportation and improving road safety.

Green Public Spaces

By 2030, provide universal access to safe, inclusive, and accessible green public spaces. This includes providing special attention to the needs of women, children, older people, and people with disabilities.

Reduced Environmental Impacts

Reduce the negative environmental impacts of cities, including outdoor air pollution.

Sustainable Development Goal - 12

Ensure Sustainable Consumption and Production



Vision

The State's vision on SDG 12 is "to develop policy and strategies with a thrust on self-regulation in using natural resources and market principles, with the main objective of reducing resource intensity and achieving resource efficiency. It shall be achieved with the active participation of all stakeholders, resulting in sustained adoption of the resource efficiency in all sectors of the State".

Achievements

- In 2019-20, The overall Index Score for the country is 74, ranging between 47 and 99 for States and UTs. Telangana's score is 73, improved from the previous score 58, which is very close to the national average of 74
- Telangana has emerged as a food surplus state due to structural changes brought about in agriculture. A significant thrust has been accorded to irrigation which in turn has increased the area under cultivation. State initiated innovative policy and programmes like de-centralised procurement especially in case of paddy, storage of food crops and distribution of food grains under the PDS
- In 2014 the State's power generation capacity was 7,778 MW and by 2019-20, it has doubled to 15,864 MW
- The Mission Kakatiya flagship programme, helped rejuvenate 46,531 tanks in a phased manner by de-silting them and reviving the traditional chain of link canals, enhancing capacity to store 265 TMC water in five years since 2015
- Per capita availability of electricity measured kilowatt per hour was 1151.8 kWh in 2014-15, increased to 1888.4 kw/h in 2018-

19. The State's per capita availability is 71 percent more than all India's average of 1.208 Kw/h. Telangana is one of the eight states in the country that has achieved 100 per cent electrification to households

- Telangana State has rich livestock resources, especially cattle and sheep population, accounting for 25.67% of the country's stock. The State stands 1st in sheep population, 12th in goat population, 3rd in poultry, 15th in bovine population and 14th in pig population and 8th in Livestock population in the country as per the Livestock Census, 2019
- About 25.82 lakh families in Telangana State are engaged in the livestock sector for their livelihood. The value of livestock production is estimated to be Rs 62,403 crore at current prices (AE) and the livestock sector contributes 7.6 % to GSDP 2019-20
- Telangana State Stands at 13th position in milk production, with 3.95 MTs production in India. The per capita availability of milk for 2019-20 was 316 grams per day

Challenges

Capacity building of the frontline staff and other stakeholders is highly essential for achieving the targets of SDG 12. Sustaining and continuing the eco-friendly technologies is a major challenge, it implies that more R&D initiatives are vital for the implementation of eco-friendly technologies. Awareness campaigns need to be organised to bring about changes in the behavioural attitudes of the people at the grassroot levels for better sanitation and hygiene practices. Maintaining resource efficiency for sustainable production and consumption is the need of the hour.

12.1 The Context

Efficient Use of Resources

The scarcity of natural resources has made it necessary for the nations to evolve measures for effective and efficient usage of the limited resources to address the growing needs of the present population and rise in the population in next few years. The primary concern regarding Goal 12 is the approach and lack of awareness

of the stakeholders in achieving and realising the Goal.

The SDG 12 “Sustainable Consumption and Production” exhibits linkages with few other goals, as shown in the diagram below. The vital point to be noted regarding SDG-12 is that it requires a multi-sectoral approach and requires co-ordination among various allied sectors to fulfill the key indicators’ goals and objectives.



Attaining resource efficiency, effective and sustainable use of resources is the main idea behind SDG 12. This goal contains 11 targets and 13 indicators. While the targets specify the goals,

the indicators specify the metrics to achieve them. The primary concern is assembling data from multiple resources, as many targets need a different methodology to evaluate their indicators.

Table 12.1 Target Wise Dimension and Goal for SDG 12

SDG Goal 12: Responsible Consumption and Production	Target	Target Dimension	Goal by 2030
	12.1	Sustainable consumption and production action plans	Implement the 10-year sustainable consumption and production framework
	12.2	Sustainable management and use of natural resources	Achieve efficient usage of natural resources
	12.3	Global food loss	Halve global per capita food waste.
	12.4	Environmentally sound management of Chemical Waste	Responsible management of chemicals and waste
	12.5	Substantially reduce waste generation	Through prevention, reduction, recycling and reuse
	12.6	Companies publishing sustainability reports	Encourage companies to adopt sustainable practices and sustainability reporting
	12.7	National sustainable procurement plans	Promote sustainable public procurement practices
	12.8	Understanding of sustainable lifestyles	Promote universal understanding of sustainable lifestyles
	Means of Implementation		
	12.a	Support for developing countries' capacity for sustainable production	Support developing countries' scientific and technological capacity for sustainable consumption and production
	12.b	Monitoring sustainable tourism	Develop and implement tools to monitor sustainable tourism
	12.c	Removing fossil fuel subsidies	Remove market distortions that encourage wasteful consumption; promotion of alternative fuels

Source : UNDP

The issue of efficient resource use is vital for the country. While India is home to 18% of the world's population, it has only 4% of global water resources. The generation of waste and pollutants also poses the biggest challenge. Only 19.9% of India's urban waste is processed. India is the third-highest emitter of carbon dioxide and is responsible for 6.9% of global emissions. India is committed in the year 2015 to reducing emissions intensity of its GDP by 20-25% from its 2005 levels, decreasing 33-35% by 2030. On 2 October 2016, India formally ratified the historic Paris Agreement. The National Policy on Biofuels and the National Clean Energy Fund are some of the Government's flagship schemes to achieve sustainable consumption and production and manage the efficient use of natural resources⁷³.

Telangana State is mainly rural, and the people depend heavily upon the land and its natural resources for sustenance and livelihood. The use of natural resources encompasses land cultivation, fodder, fuel wood and other forest products, mining, minerals crop and animal waste, water for drinking, cooking and irrigation and fisheries. Natural resources provide opportunities for employment and income generation, particularly during the slack agricultural season. Population growth, market forces and industrialisation have resulted in the over-exploitation of natural resources, at a rate exceeding their natural

regeneration rate, with inadequate efforts made for their regeneration or conservation (MDG, 2015).

NITI Aayog undertook the extensive exercise of measuring India and States progress towards the SDGs for 2030, culminating in the development towards achieving SDGs, of which the first SDG India Index - Baseline Report in 2018 and the second report released in 2019 and the latest report SDG India Index 2020-21. The SDG India Index by NITI Aayog intended to provide a holistic view of the social, economic, and environmental status and UTs, supporting States/UTs to identify priority areas in which they need to invest and improve by enabling them to measure incremental progress. The SDG India Index, 2018, had excluded SDG 12 due to the non-availability of data compared across states and UTs⁷⁴.

Sustainable Development Goal India Index 2020-21 report measuring countries' performance in executing the SDGs, examined seven national indicators. The overall Index Score for the country is 74, ranging between 47 and 99 for States and UTs. Telangana's score is 73, improved from the previous score 58⁷⁵, which is very close to the national average of 74. The position seems a little encouraging and needs urgent action to preserve the natural resources for future generations and achieve the SDG implementation by 2030.

Table 12.2 Status of Indicators Across Telangana and India

Sl. No	Targets	Indicator	Telangana	India	Target
1	12.2	Per capita fossil fuel consumption (in kg.)	198.4	157.3	64.1
2	12.4	Percentage use of nitrogenous fertilizer out of total N,P,K, (Nitrogen, Phosphorous, Potassium)	66.00	64.39	57
3	12.5	Hazardous waste generated per 1,000 population (Metric tonnes/Annum)	9.93	8.09	4.04

73 SDG 12: Sustainable Consumption And Production (un.org)

74 SDG India Index, 2018 report by NITI Aayog.

75 SDG India Index, 2019 report by NITI Aayog

Sl. No	Targets	Indicator	Telangana	India	Target
4	12.5	Quantity of hazardous waste recycled/ utilized to total hazardous waste generated (%)	52.25	44.89	100
5	12.5	Plastic waste generated per 1,000 population (Tonnes/ Annum)	4.94	2.54	1.27
6	12.5	Percentage of BMW treated to total quantity of BMW generated	100	86.91	100
7	12.a	Installed capacity of grid-interactive biopower per 10 lakh population (MW)	5.49	7.62	21.81

Source: SDG II, NITI Aayog, 2020-21.

Both National and State Governments have endorsed policies, initiated few programs, and initiated schemes that directly serve the SDG 12. Few missions are also undertaken on war footing to achieve targets in SDG 12. States aligned their schemes/programmes with national-level schemes/programmes which already are aligned with the SDGs. Few initiatives concerning this SDG in the State are as follows.

12.2 SDG-12 Targets and Indicators

Target 12.1: *Mission Kakatiya & Harithaharam*

Target 12.2: *National Mission on Food Processing Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters (SAMPADA) (Centre); The Telangana State Food Processing Society (State)*

Target 12.3: *Integrated Solid Waste Management*

Target 12.3a: *National Policy on Bio Fuels, National Clean Energy Fund (Centre), Telangana State Electric Vehicle and Energy Storage Policy 2020-2030, The Telangana Solar Power Policy, 2015 (State).*

Indicators for Achieving SDG-12

Against this backdrop, the following are the target-wise monitoring indicators for achieving the SDG-12 in the State. The base values derived are for the year 2020 and the short-term, medium-term, and end-term targets are set respectively for 2022, 2025 and 2030.

Target 12.4: *Implement the 10 Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries*

The national indicator for this target is the “Formulation of national sustainable consumption and production (SCP) framework and integration of it with national/state planning process.”

In recent times Telangana has emerged as a food surplus state due to structural changes brought about in agriculture. A significant thrust has been accorded to irrigation which in turn has increased the area under cultivation. State initiated innovative policy and programmes like decentralised procurement especially in case of paddy, storage of food crops and distribution of food grains under the PDS⁷⁶. The power sector has also seen a significant transformation after the State’s formation, from an energy deficit scenario to an energy surplus state by the year 2016 itself. In 2014 the State’s power generation capacity was 7,778 MW and by 2019-20, it has doubled to 15,864 MW. Since the basic need of the State in terms of power infrastructure and food grain production has been fulfilled, the focus needs to be on sustainable management of production and consumption in line with the broader goals of the State in general and SDG goals in particular. The Telangana State has started targeting its policy approach by encouraging interdepartmental coordination to

⁷⁶ SDG 2 consists of a detailed account of SFSA and distribution of food grain under PDS to BPL population.

implement a long-term sustainable consumption and production framework. Crop diversification is being encouraged towards sustainable use of natural resources, and at the same time catering to the diversified needs of the population.

Target 12.5: *By 2030, Achieve Sustainable Management and Efficient Use of Natural Resources*

The national indicators for this target are “percentage variation in per capita use of natural resources.” For the State, three indicators can be observed concerning this target and for effective monitoring and implementation. These are per

capita availability of groundwater, surface water and electricity.

Ground Water

Due to rapid economic and demographic change, the water demands among different sectors viz irrigation, domestic and industry are increasing. According to projections by National Commission on Integrated Water Resources Development (NCIWRD), the irrigation sector alone needs an additional 54 bcm by 2025 and 250 bcm of water by 2050 compared to the demands in 2010 in the country (Table 12.3).

Table 12.3 Sector-wise projected water demand in India (in billion cubic meters)

Sector	2010		2025		2050	
	High	Low	High	Low	High	Low
Irrigation	543	557	561	611	628	807
Drinking Water	42	43	55	62	90	111
Industry	37	37	67	67	81	81
Energy	18	19	31	33	63	70
Other	54	54	70	70	111	111
Total	694	710	784	843	973	1180

Source: https://www.adriindia.org/adri/india_water_facts

Telangana State has 3.6 per cent of national groundwater resources and 2.89 per cent of the country's population. In Telangana, deeper water levels are identified in the western part; the primary source of irrigation is groundwater in the districts of Mahabubnagar (undivided), Rangareddy and Kamareddy. Whereas in the eastern part, due to high rainfall and proper groundwater management, shallower water levels are identified in Khammam, Suryapet and Mancherla⁷⁷. The chapter on Sustainable Development Goal (SDG 6) Clean Water and Sanitization described the groundwater situation in Telangana State⁷⁸ in detail.

State Government Initiatives

Telangana State has restored the most critical wells through the Mission Kakatiya flagship programme, which aims to restore all minor tanks in the State⁷⁹. The programme helped rejuvenate 46,531 tanks in a phased manner by de-silting them and reviving the traditional chain of link canals, enhancing capacity to store 265 TMC water in five years since 2015. Groundwater levels have increased due to such rejuvenation of tanks and the quality of water too improved. Tanks are the lifeline of the rural ecosystem, especially in the dryland regions of the State. Tanks benefit in multiple ways such

⁷⁷ www.swaniti.com

⁷⁸ See Chapter on SDG -6, Clean Water and Sanitisation.

⁷⁹ Mission Kakatiya, colloquially known as Mana Ooru Mana Cheruvu is a noble initiative of the Telangana Government to introduce large scale rehabilitation for the tanks and lakes in the region which are one of the most important irrigation sources for the crops grown in the State. The mission was launched by Chief Minister of the State on 12th March 2015.

as reduced dependence on power for irrigation needs, contributing to soil and water conservation, flood control, drought mitigation, livestock and domestic uses, recharge of groundwater, improvement of microclimate and protection of environment besides contributing to agriculture growth by way of raising irrigation intensity and thereby crop intensity. It helped in biodiversity by attracting migratory birds and rearing fish in the tanks and canals.

Restoration of tanks helps meet most UN Sustainable Development Goals (SDGs) in general and SDG 6 (Clean water and sanitation),

SDG 13 (Climate Action), SDG 14 (Life below water), and SDG 15 (Life on Land) in particular. Studies by different institutions like the University of Michigan, University of Chicago, ICRISAT, NABCONS (NABARD Consultancy Services) concluded that through the Mission Kakatiya programme, there had been a significant increase in the groundwater table as well as saving of natural resources by way of reduction in fertilizer usage for crops because of application of silt, less utilization of electricity. The programme has contributed to the enhancement and strengthening of livelihoods through the increase in cultivated areas⁸⁰.

Table 12.4 Implementation of Mission Kakatiya in Phases I to IV

Item	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 (%)	
Number of tanks programmed	8003	20	8946	20	6047	20	4629	20	27625
Number of tanks taken up for comprehensive restoration	7954	19.87	8863	19.81	5958	19.70	4214	18.20	26989
Ayacut in Lakh Acres	6.92		6.83		3.81		3.22		20.78

Source: Irrigation and Command Area Development, Government of Telangana, 2020.

As another initiative in sustainable water management in urban water bodies in Hyderabad, the state government has prepared an action plan for developing the Musi riverfront project with an estimated amount of Rs 50,000 crores over the next five years. In 2020-21⁸¹, Rs 10,000 crore had been allocated to carry out the Musi River purification and Musi River Front Project along with other special projects of water supply system in Peripheral Circles of GHMC, Comprehensive Sewerage Master Plan (CSMP), Fecal Sludge and Septage Management (FSSM) in the Hyderabad

Urban Agglomeration area. It also rejuvenated many lakes located in and around Hyderabad city.

In addition to the above initiatives, the Telangana government had made it mandatory for the construction of rainwater harvesting conservation structures in all household premises with plot area more than 200 sqm vide 'The Telangana Water Land and Trees Act (TWALTA) 2002'⁸² to promote water conservation and to protect and to improve the groundwater for sustainable water yields in the bore wells.

⁸⁰ Please refer to Table 12.5 : Studies on Impact of Mission Kakatiya, in Appendices

⁸¹ Telangana Budget Analysis 2020-21 (prsindia.org)

⁸² An act to promote water conservation and tree cover and regulate the exploitation and use of groundwater & surface water for protection and conservation of water sources, land and environment and matters connected therewith, or incidental thereto. APWALT Act was initiated in 18th April 2002, in united Andhra Pradesh, after formation of state adopted as it was.

Post State formation, top priority was given to drinking water, sanitation, and a hygienic environment, which are vital for the well-being of the people by strengthening the existing water supply and sewerage infrastructure facilities in all urban local bodies. In this regard, huge investments were made to create infrastructure in water supply, sewerage, and other infrastructure in Urban Local Bodies (ULB). Rupees 764 Crores has been allocated to address the water needs of peri-urban areas of Hyderabad. Telangana State planned a 2-phase water distribution within Outer Ring Road (ORR), in phase-I covering 25 ULBs and 18 Rural Local Bodies (RLB). To provide 24/7 water to the residents in Hyderabad Urban Agglomeration (HUA), the 'Ring Main project' envisages spending of Rs.4765 crore, eventually laying of 3000 mm dia MS pipeline for a length of 158 Km all along with ORR, a total of 955⁸³ million gallons per day of water which can be equitably and efficiently distributed through proposed 300 mm dia Ring Main along with ORR.

The Government's policy is to provide potable drinking water to all the rural and urban households in the State through piped connection under the flagship programme of "*IntiIntiki Nalla*" through a Statewide drinking water Grid.

Several water supply improvement schemes were taken up under different nomenclatures in the State in both urban and rural areas, such as

1. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)
2. TMDP (Telangana Municipal Development Projects)⁸⁴
3. Mission Bhagiratha – Urban and Rural and peri-urban (Flagship Programme of Telangana)

Apart from water supply schemes, 5 Sewerage Projects were also taken up by the department, out of which 3 Schemes, i.e., Vikarabad Under Ground Drainage, Nizamabad Under Ground Drainage and Karimnagar Under Ground Drainage are completed successfully.

Energy

The State's energy department is the nodal department for the "per capita availability of electricity" indicator.

After the formation of the Telangana State, due to the state government's efforts, the per-capita availability of electricity has increased significantly. Per capita availability of electricity measured kilowatt per hour was 1151.8 kWh in 2014-15, increased to 1888.4 kw/h in 2018-19. The State's per capita availability is 71 percent more than all India's average of 1.208 Kw/h. Telangana is one of the eight states in the country that has achieved 100 per cent electrification to households⁸⁵.

Telangana state is also using renewable energy sources to achieve the sustainable availability of electricity. The State has a total installed capacity of 3.944 MW of renewable energy, including solar energy, as of 2019-20. To leverage the renewable potential, the State is implementing Telangana State solar policy 2015, which aims to provide fiscal incentives for investment in green energy. Solar power projects (SPP), solar rooftop projects (SRP), off-grid applications and solar parks are covered under this policy.

Telangana has vast solar potential with average solar insolation of nearly 5.5 kWh/m² for more than 300 sunshine days. The State has adopted a multi-pronged strategy to embrace Resource Efficiency in the State. Also, Telangana made substantial achievements in the solar segment by adopting suitable practices and critical strategies.

83 The 20 TMC of water from Keshavapuram Project under Kaleshwaram Lift Irrigation and another 10 TMC from Yellampally Barrage of Godavari source and 16.5 TMC from Krishna Source and also 9 TMC from the old sources put together 55.5 TMC.

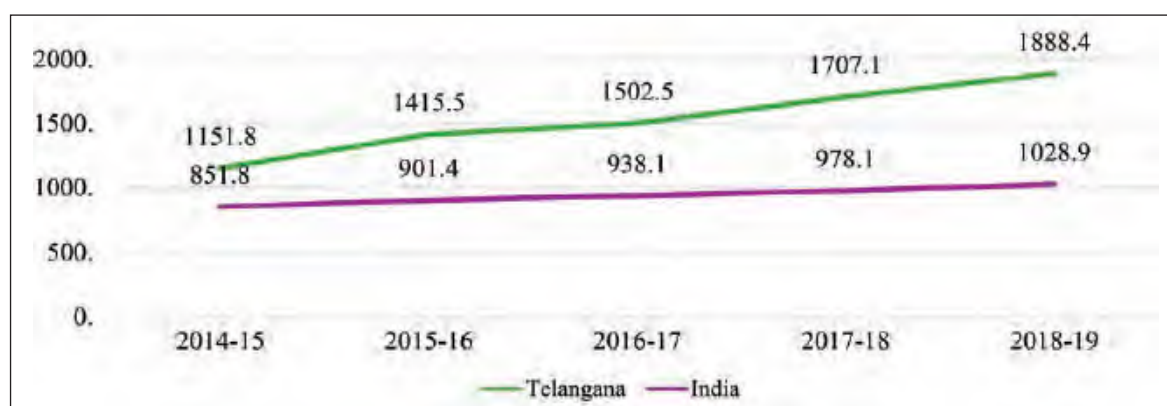
84 The Telangana Municipal Development Project (TMDP) is a US \$387.3 million project being implemented by Telangana State with support from World Bank Focused attention to integrated development of Basic Services to the Urban Poor in the cities covered under the Mission. The scheme is monitored by the Municipal Strengthening Unit (MSU) at C&DMA office.

85 See India residential energy survey 2020, council of energy, environment and water, October, 2020.

The State has followed a unique strategy to utilize solar energy effectively. It powers its pump sets during the daytime, which helps it divert excess solar power and avoids the significant problem of power evacuation or grid integration. Due to low land availability in urban areas, the focus has shifted from ground-mounted to de-centralized and rooftop solar power. Some key incentives are given

in the State to enhance high solar capacities like exemptions from Electricity Duty, VAT, wheeling and transmission charges (for captive use) within the State, Centrally Sponsored Schemes (CSS), Stamp Duty, land ceiling, 100% banking facility, Clean Development Mechanism⁸⁶ (CDM) benefits and Pollution Control Board (PCB) clearances.

Figure 12.1 Per-Capita Availability of Electricity



Source: Handbook of Statistics on the Indian Economy, Reserve Bank of India, 2020

Strategy for 2030

The Government envisages raising the ratio of renewable energy by 2030 in its energy basket and strives towards green energy in the coming decade by following medium-term and long-term plans.

Target 12.6: *By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.*

In developing countries like India, food wastage occurs in agriculture, particularly in the post-harvest supply chain. Harvesting, storage, handling, packaging, and transport are critical points in the food supply chain. According to the State of Food and Agriculture (SOFA), 14% of the world's total food lost between harvest and retail sales⁸⁷.

Food loss can occur at several stages in the supply chain, including raw material procurement, storage, production, dispatch, logistics, and retail. Moreover, different products have different requirements for processing and storage that may demand different forms of technologies (Chauhan, 2020). As estimated by a study conducted by the Central Institute of Post-Harvest Engineering & Technology (CIPHET), Ludhiana, the country's current food wastage stands at 4.65% to 15.88% most wastage occurring in perishables, including fruits and vegetables. The annual losses based on these estimates are estimated at Rs.92651 crores. Apart from the social burden of food wastage, the net economic burden of food wastage is immense. Focus on developing food processing and food preservation infrastructure can help reduce this

⁸⁶ The Clean Development Mechanism (CDM) is an arrangement under the Kyoto Protocol allowing industrialized countries with a greenhouse gas reduction commitment to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries.

⁸⁷ Food and Agriculture Organisation (FAO), 2019, "The State and Food and Agriculture- moving forward on food and waste reduction" United Nations, Rome.

burden and help mitigate the price fluctuations of perishable agricultural commodities.

A well-developed food processing sector with a higher level of processing helps reduce wastage, improves value addition, promotes crop diversification, ensures a better return to the farmers, promotes employment, and increases export earnings. This sector can also address critical issues of food security, food inflation, and providing wholesome, nutritious food to the masses.

New Initiatives

Understanding the importance of the supply chain, the State has taken several initiatives in the use of technology across the supply chain process through the nodal department of the Telangana State Civil Supplies Corporation Limited. Other related departments like the Markfed, FCI, MARKFED Corporation, Telangana State Food Processing Society are made a part of these initiatives.¹⁶ The State has increased warehousing capacity to facilitate easy accessibility to the farmers, minimize storage loss and wastage, improve rural liquidity, and overcome the volatile market prices of agricultural commodities to the maximum extent possible. There are at present 846 godowns in the State, with a total capacity of 60.1 lakh MTs. 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 occupancy for consecutive 3 years and is planning to increase capacity significantly⁸⁸.

Food Processing

The Telangana State Food Processing Society (TSFPS) has been established to promote the food processing industries. There is a felt need to establish this as the gross cultivated area has risen due to the creation of irrigation through redesigned major projects and rejuvenation of existing tanks. The food processing industry covers the establishment of food processing units that process raw materials

such as cereals, pulses, oilseeds, fruits, vegetables, milk, meat, poultry, and fish produce. The TSFPS provides Grant-in-Aid for up to 50% of the project cost and other incentives to set up Food Processing Units, Cold Chain and Preservation Infrastructure, including reefer vans. The State also encourages new industrial enterprises through T-IDEA (Telangana State Industrial Development and Entrepreneur Advancement) to support the initiative financially.

Food processing has been identified as one of the 14 thrust sectors for the State in the industrial policy framework of 2014. The Telangana Food Processing Policy, announced in 2017, aims to realize investments worth Rs 20,000 crore in the food processing sector and create about 1.25 lakh direct jobs. The new policy would enable the Government to interlink the food processing sector with agriculture, horticulture, aquaculture, dairy, meat, and other food production sectors to improve farmers' income. To promote the FP industry, the policy also recommended optimum use of existing schemes like sheep rearing, dairy farming and fish cultivation. The policy aims for an integrated plan which benefits farmers, women, self-help groups, industries and employs youth. Further, the policy recommends setting up district-specific FP industries to create a value chain of farm and other food products to boost the food processing capacity of the State by at least 20 per cent, AgriTech fund to be created for promoting start-ups in the food processing sector.

To make Telangana a pioneering State in food processing, around 8000 micro processing units have been identified by the state government as part of the Pradhan Mantri Formalisation of Micro food processing Enterprise (PM-FME) Scheme. Thirteen crops and 4000 farmers are also identified and they are to be brought under the food processing sector. With the help of Product Linked Incentive (PLI) and central government support, the food processing sector in Telangana

⁸⁸ Telangana Socio-economic Outlook, 2021.

will create 2.5 lakh jobs by 2026-27 and produce processed food worth Rs.33494 crores and increase processed food exports.

A Promising Procurement Process

Telangana State Markfed is an apex organization in the Cooperative Sector with a net membership of 552 cooperatives throughout Telangana State. MARKFED in the State undertakes activities to serve the farmers through PACS, DCMS, AMCs, and village organizations of self-help groups. It is the nodal agency for coarse-grain procurement and pulses under Minimum Price Support Price (MSP) operations in the State. Besides MSP operations, Markfed also undertakes commercial procurement of agricultural commodities like chilies, KP onions, black jaggery, and thus playing an influential role in the supply chain of these commodities.

In the year 2020, the Civil Supply Department in Telangana State (TSCSC) has established a 'Decentralised Paddy Procurement System' with Paddy Procurement Centers (PPC) directly procuring paddy from farmers at Minimum Support Price (MSP)⁸⁹. The State Agriculture University has developed a new variety of paddy, 'Telangana Sona.' Besides, other good qualities result in less broken grain and lower wastage after milling the grain.

Meat and Dairy Products

Telangana State has rich livestock resources, especially cattle and sheep population, accounting for 25.67% of the country's stock. The State stands 1st in sheep population, 12th in goat population, 3rd in poultry, 15th in bovine population and 14th in pig population and 8th in Livestock population in the country as per the Livestock Census, 2019 (P).

About 25.82 lakh families in Telangana State are engaged in the livestock sector for their livelihood. The value of livestock production is estimated to be Rs 62,403 crore at current prices (AE) and the livestock sector contributes 7.6 % to GSDP 2019-20 (AE)⁹⁰.

Telangana State stands at 13th position in milk production, with 3.95 MTs production in India. The per capita availability of milk for 2019-20 was 316 grams per day (Dept. of Animal Husbandry). According to WHO, the recommended per capita consumption for milk is 250 grams per day.

The nodal department for the indicator "Meat per capita availability" is the Animal Husbandry Department. Telangana State stands at the 6th position in meat production, with 0.43 MTs per annum production in India. The value for the year 2019-20 was 0.023 kgs per annum.

Fisheries is one of the fastest-growing sectors in terms of generating income and employment. The chapter on SDG 14, 'Life Under Water,' discusses the development in the fishery sector in the State.

Strategy for 2030

The Telangana state aims to increase its per capita milk availability by the year 2030 and advanced programs will be undertaken to boost up meat production in poultry, piggery, sheep and goat rearing in the State in an environmentally friendly manner.

The state government must plan construction of scientific warehouses to increase capacity of storage to reduce storage gap to halve the per capita food wastage at the consumer level and supply chain side.

89 TSCSC 'Identified Millers' will acknowledge the total quantity of paddy sent from various PPC centers allocated. TSCSC Identified godown would receive the rice from respective millers. The system ensures that the entire paddy procured is utilized either by the Civil Supplies Corporation or by the FCI. As a measure of hassle-free paddy procurement without giving scope to mediators, the Civil Supplies department has adopted OPMS (Online Procurement Management System) from 2016 onwards and the MSP is being paid to farmers directly to their bank accounts within a short period.

90 Telangana Socio-Economic Outlook, 2021.

The post-harvest storage and diminution losses of wheat and rice stocks in the State were 0.29 percent in 2020. The Target set for 2022 is to reduce 0.04 percentage points, i.e., to 0.25, and in 2025 it is at 0.23 per cent and 0.20 per cent in 2030.

Necessary infrastructure needs to be put in place to reduce the physical wastage of produce while processing and reducing loss of food.

Target 12.7: *By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, according to agreed international frameworks, and significantly reduce their release in air, water, and soil to minimize their adverse impact on the human health environment.*

As a part of sustainable agriculture practices, the central Government and Telangana State have encouraged the farmers to use biofertilizers. Incentives are provided to the farmers for the use of bio-fertilizers.

Target 12.8: *By 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse.*

Municipal Solid Waste Management (MSWM), comprising segregation, collection, transportation, and treatment, is critical in achieving sustainable development. Telangana state has made significant progress in developing a strategic approach to address the waste due to the adverse impacts of unmanaged solid waste on the environment and public health. There is improved sanitation in the ULBs (Urban Local Bodies) due to 100% segregation of waste, door-to-door collection system, and subsequent waste and reuse treatment. There is enhanced aesthetic appeal of the State through efficient solid waste management, significant reduction of disease outbreaks in the State, revenue generation for the ULB as the dry and wet waste is sold to various vendors upon due treatment, momentarily reduces the burden on the existing dump yards

in the states. These models integrate Information, Communication Technology (ICT) by including aspects like General Packet Radio Service (GPRS) systems for collection trucks to monitor routes and timings, a biometric attendance system for the municipal sanitation workers, ensuring efficient and streamlined functioning of the system.

The State has been working on all fronts to improve the civic infrastructure to make Hyderabad an international city. As part of a significant drive to make Hyderabad a clean city, the municipal authorities (GHMC) distribute two dustbins each to the 42 lakh households in the City for collecting dry and wet garbage separately by distributing free bins as part of the “Swachh Hyderabad” initiative. About Rs.42 crore has been spent on garbage bins to segregate dry solid waste or non-biodegradable and recyclable, wet municipal solid waste or biodegradable waste, mandatory as per the Municipal Solid Waste Rules and National Green Tribunal orders. Along with this, 1,005 auto trolleys are provided by GHMC for collecting garbage from houses in the City.

As a part of Pattana Pragathi and Palle Pragathi Programme⁹¹, Telangana State focuses on a model town and City, such as garbage disposal, cleaning drainage every day, supply drinking water daily, functional streetlights, and good roads without potholes. Each city and town should have greenery everywhere, provide dumping yards, cremation and burial grounds, vegetable and meat and poultry markets, parks, open playgrounds, and gyms for the youth. Identifying minimum civic facilities and providing them public toilets by utilising government land, street vending zones, parking lots for autorickshaws, taxis on government lands, distributing dustbins to every household for dry and wet garbage, adequate number of vans to transport garbage, purchase machines for drainage cleaning.

91 The Government launched the Palle Pragathi programme on 6th September 2019. The two 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 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.

State Government Initiatives

The State also has undertaken waste recycling projects to recycle the organic waste generated from vegetable markets. Recycling of waste benefits in many ways, such as reducing the burden on landfills, controlling emissions from the fire of dumpsite and other fugitive emissions, reducing greenhouse gas emissions, better hygiene, preventing surface and ground pollution, and preventing bird menace. A bio-gas treatment plant is established at Sircilla Municipality, on 16.25 acres, with a cost of 0.75 lakhs. Wastes from the market, hotel, kitchen, and animal waste (both dry and wet), almost 300-500 kgs, are converted into compost within 20-30 days. Similarly, the Siddipet municipality has constructed a state-of-the-art Solid Waste Management (SWM) resource park with a built-in composting yard. About 8 MT of waste is treated every day, which produces about 2 MT of compost. 5 MT of dry waste is also recycled and sold for power generation every day.

Similarly, 100% door-to-door collection and source segregation at the household level is sustained by ICT integrated GPRS tracking systems on the collection vehicles. 28 MT of waste is collected and transported for treatment. The compost generated is used in the park for planting trees across the city through the Haritha Haram scheme. The municipality also developed the resource park by planting nearly 500 saplings to provide an aesthetically pleasing environment and control odor.

Bhongir Vermi-Compost Yard is yet another initiative where along with recycling of the waste, generated compost is being used in the established management park. Innovative practices such as establishing underground bins, open dumping

areas being beautified by putting up posters, plants, rangoli and so on are also being followed.

Jalpally Municipality⁹² produces the organic fertilizer through the **Windrow Composting**⁹³ by collecting the wet waste from vegetable markets and dry leaves from parks and streets across the town. This unit treats almost 1.5-2 tonnes of waste collected daily, generating 2-3 tons of compost every month sold to nurseries, other ULBs and residents at Rs. 5 per kg.

The **Waste to Energy Plant** commissioned within the premises of Dr. B.R. Ambedkar Agriculture Market in Bowenpally is unique. The vegetable and fruit waste are being used to generate power to the extent of 500 units a day and 30 kilos of green manure utilizing 10 tonnes of leftover market waste. Nearly 2000 to 2500 varieties of vegetables/ fruit arrive at the market from other states and districts of Telangana. The power generated is being used to light up more than 100 streetlights in the market, stalls, administrative buildings, and run the canteen in the premises, enabling the market committee to make substantial savings in power bills.

The solid waste in the State is recycled on a project mode through the Integrated Municipal Solid Waste Management (IMSWM) Project, operated by the Hyderabad Integrated MSW (HIMSW) Ltd. Municipal solid waste of about 6,000 metric tonnes per day (in Hyderabad city alone) is mechanically segregated into biodegradable waste. The compost is prepared and non-biodegradable waste from which recyclable high-value plastics is separately recycled. The remaining plastics and other combustible materials are stocked up for use as Refuse Derived Fuel (RDF) as an alternative fuel in cement plants and 'Waste to Energy plants.

92 Jalpally Municipality in Ranga Reddy District has been instituted (vide G.O.Ms.No.99th MA&UD) on 11 March 2016 by merging four villages, namely Jalpally, Pahadishareef, Kothapet and Balapur. Its distance from the capital city Hyderabad is 12 Kms.

93 Windrow composting involves forming organic waste into rows of long piles called "windrows" and aerates them periodically by manually or mechanically turning the piles. The ideal pile height is between four and eight feet with a width of 14 to 16 feet. This size pile is large enough to generate enough heat and maintain temperatures. It is small enough to allow oxygen flow to the windrow's core. It is suited for large volumes of various waste such as yard trimmings, grease, liquids, and animal by-products (such as fish and poultry wastes) and high volume food-processing businesses (e.g., restaurants, cafeterias, packing plants).

During the FY 2020-21 (till Oct'2020), an average quantity of 5750 MT per day of solid waste generated from GHMC and a few surrounding ULBs was treated and scientifically disposed of. Correspondingly, on average, 208 MT of compost and 2400 MT of Refuse Derived Fuel (RDF) per day were produced by processing the MSW. The RDF is being used as green fuel for energy generation through the 19.8 MW waste-to-energy plant established at the processing facility⁹⁴.

Further to control indiscriminate disposal of construction and demolition waste, waste generators in low-lying areas, outskirts of the city, private/ public open spaces, roadsides, or drains (nalas), GHMC took up Construction & Demolition Waste Management Project (C&DWM) in 2017. A C&D Waste Management plant of 500 TPD capacity plant working on wet processing technology is established at Jeedimetla FY 2019-20. So far, a total quantity of 8,24,509 MT of C&D waste was collected and transported, of which 44,914 MT waste was processed at this plant.

Several industries producing wastes that have a high potential for energy generation are connected through the Industrial Waste Grid to Industrial Waste to Energy Projects, such as distilleries, sugarcane press mud, dairy industry waste, paper & pulp, poultry, and abattoir is planned to generate power. And gross estimation of power potential from all such industrial wastes is 175 MW.

Plastic Ban

Following up on the Prime Minister's campaign against plastic use, the Telangana State also announced a ban on single-use plastics in June 2018. The ban covers drinking water plastic and tetra bottles, single-use straws, Styrofoam teacups/containers, plastic below 50-micron plastic or plastic coated items and any other forms of single-use/banned plastic. All offices of urban local bodies

are restricted from using and stocking any single-use plastic products and follow twin bin system of waste disposal in compliance with Solid Waste Management Rules (2000) and guidelines of the Central Pollution Control board towards plastic disposal (2018). For the public, polybags were strictly banned, while it was advised that single-use plastic be contained. All ULBs in the State have banned the single use of plastic, and the achievement is 100 percent.

Strategy for 2030

Telangana State has followed a multifaceted approach to recycling and reusing the waste composted from door-to-door collection. 94 ULBs follow segregating the dry and wet waste out of 141 ULBs constituting 66 per cent of the target for 2022, while the target is set as 80 per cent, i.e., 111 ULBs. The target for 2025 is 100 percent that is, all 141 ULBs should be using the waste segregating practices.

As of now, none of the ULBs have waste recycle plants installed, the target set by 2022 is 92 ULBs, i.e., 65 percent and by 2025, 112 ULBs, i.e., 80 per cent and finally, by the end of 2030, the target is set as all ULBs located in the State are to be equipped with the waste recycling plants.

A complete ban on plastics may put undue pressure on forests, according to forest officials. Acceptable recycling norms like raising the thickness of plastic, behavioral changes like waste segregation, recycling, responsible disposal of plastics need to be inculcated among the people through ICT mode. As an example of civil awareness, the HYSEA (Hyderabad Software Enterprises Association) initiated a 100 percent ban on single-use plastic across the IT corridor. Sustainable waste disposal management models can be successful if they are participatory in nature, with citizens actively involved in every phase with a sense of ownership. It is also gendered inclusive, as women sanitation

⁹⁴ Telangana Socio-Economic and Outlook, 2021.

workers are engaged in SWM activities, and they are successfully integrating the informal sector rag pickers into the system generating employment opportunities for them. Further, any policy related to plastic usage has to be assessed with likely alternatives like paper bags, cloth bags and bio-degradable bags as these have a much worse impact on climate, soil, water, and toxic emissions.

Target 12.9: *Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.*

“Proportion of companies publishing sustainability reports” is one of the main indicators of this goal. It is not easy to monitor the same through any indicator. Almost all companies provide financial reports but neglect their social and environmental impacts. Their practices generally hide risks faced by the environment due to the companies’ conduct and keep their investors in the dark concerning threats posed by their companies.

At the global level, around 230 companies are publishing sustainability reports of their company’s performance. Adopting sustainable practices by MNCs across India results in specific achievements like enhanced investments and trust in business. A few examples like Flipkart (Bangalore unit) and Amazon are replacing plastic with paper and pet bottles with steel bottles.

Strategy for 2030

As Telangana State is slowly emerging as an essential destination for transnational companies, the state government must establish infrastructural frameworks to encourage companies to follow sustainable practices in infrastructural developments and production of goods and services and encourage companies to integrate sustainability information into their reporting cycle. The Government shall emphasize integrating sustainability in the reporting cycle of large and multi-national companies (MNC). Companies are encouraged to publish their environmental management plan and make it available in the public domain with some incentives.

Target 12.10: *Promote public procurement practices that are sustainable, in accordance with national policies and priorities*

Telangana’s commitment has focused on cultivating institutional support to provide a demonstrable and transparent procurement process. The objectives were to stimulate efficient and friendly public procurement opportunities in promoting a healthy and competitive market. The other prime initiative was to eliminate fraud, obscure activity and corruption and promoting sustainable procurement practices in the market.

State Government Initiatives

After the formation of Telangana State, several reforms were initiated under the Telangana Markets Act 2016. 57 AMCs (agriculture market committees) out of 192 AMCs in the State were linked to the National Agriculture Market portal e-NAM. The AMC Nizamabad has been awarded Prime Minister Excellence award for successful implementation of e-NAM. Under the innovative initiative of ‘Mana kuragayalu,’ a rythu market was established exclusively for women farmers to facilitate a direct market channel in Pragnapur under AMC Gajwel.

The Central government is yet to develop national ‘Green public procurement policy’ to be adopted by the Central Ministries, States and the UTs. State government on its part is improving the infrastructural capacities of green government procurement and would align its policy with the central government’s public procurement policy as and when it is formulated.

Target 12.11: *By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.*

Under the initial target of “Government to Celebrate year on Sustainable development,” the state government has been doing the following activities.

Firstly, the Forest, Ecology and Environment Department is currently celebrating Water Day

(22 March), Environment Day (5 June), which are in line with the SDGs' sensitization. To increase the green cover, aesthetic value, control the pollution and temperature, the State has taken up tree plantation under various categories like avenue plantations, colony plantations, institutional plantations, open space plantations, graveyard plantations, as part of the Telangana State Government's flagship programme of *Telangana Ku Haritha Haram* (TKHH).

Secondly, Telangana is one of the prominent states in the handloom sector. There are about 40,533 handloom weavers, including ancillary workers. Around 17,069 power looms are operated in the State, and there are nearly 615 Weavers Cooperative Societies in the State, most of them in Cotton (259) and a few in Silk (33) and Wool (44). With an agenda to revive the handloom sector in Telangana State, the Department of Handlooms and Textiles has designed 13 schemes (including centrally sponsored and State schemes) to develop the handloom industry and further the socio-economic development of handloom and power loom weavers.

Since 2015, 7 August, is observed as National Handloom Day in the State. To promote the handloom products, the government decreed employees to wear handloom clothes every Friday. The Department of Handlooms and Textiles (DoHT) under the State's Industries department, has signed an MoU with the Indian School of Business (ISB), to evaluate the implementation and performance of the state-run policies for the weaving community in Telangana. Another MoU was signed with the Indian Institute of Chemical Technology (IICT), enabling applied research on sustainable textile yarn dyeing development, reducing the impact of dyeing on weavers and the environment. IICT, working in association with the handloom weaver community, developed semi-automatic yarn dyeing devices to perform the

'*Tie-and-dye*' technique sustainably to minimize exposure to hazardous chemicals. Finally, the MoU with United Nations Development Programme (UNDP) was intended to support weavers in restoring livelihoods. 'AALAMBANA,' a mobile application, was also developed to facilitate learning digital and design skills to the weavers and create market linkages and new opportunities for weavers.

Strategy for 2030

Suitable strategies can be initiated in various department programs in the coming days to embed awareness for sustainable development and lifestyles in harmony with nature.

Biofuels and solar energy can be promoted as the primary source of fuels, in all sectors where feasible, including food processing, petrol diesel, reducing air pollution and water pollution. This will eventually encourage all stakeholders to imbibe sustainable and responsible practices. Consumer mass awareness campaigns to be increased to make them play an active role and citizens can be encouraged to make sustainable environmental choices and at the same time encourage producers to go green with their production process and supply chain.

Target 12.11a: *Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production*

In a bid to attract investments the Government of Telangana has enacted the Telangana State Industrial Project Approval and Self-Certification System (TS-iPASS) Act, 2014, for speedy processing of applications for setting up of industries in the State. 'Ease of doing business' should also include sustainable production practices which would strengthen States; scientific and technological capacity to move towards sustainable consumption and production.

Target 12.11b: *Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.*

Every year the Department of Tourism in Telangana organizes World Tourism Day Celebrations on 27 September. It presents Telangana State Tourism awards under various categories to encourage healthy competition to promote tourism activities in the State on World Tourism Day.

The Department of Tourism has conducted a detailed survey and undertaken a study and prepared **Comprehensive District Tourism Development Plans** and identified 477 tourist destinations in Telangana State. The existing amenities/facilities at the various tourist destinations, up-gradation, improvisation, and additional facilities required have been placed under the shelf of projects.

Tourism Clubs: The Tourism Department intends all the schools in Hyderabad and adjoining districts to establish the Telangana Tourism Club as a co-curricular activity that focuses on various aspects of Tourism in the State and gives a chance to the children to expose themselves to the rich heritage of Telangana. Fourteen schools have been registered for establishing the Telangana Tourism Club.

Hyderabad metropolitan city has varied dimensions. One among them is that it can also be seen as a tourism development region with significant international connectivity. In this regard, few initiatives are made to the Hyderabad city to look greener.

Green Hyderabad Initiatives

Initiatives like the Comprehensive Park Maintenance⁹⁵; Telangana ku Haritha Haram⁹⁶ aiming to raise the green belt within GHMC and HMDA limits; Green Islands and Stretches⁹⁷; Theme parks and Lake regeneration and beautification⁹⁸ programme have been taken up as part of tourism development in Hyderabad.

Target 12.11c: *Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.*

The National Clean Energy Fund (NCEF) is a fund created in 2010-11 by the 42nd Standing Committee on Energy. The fund has been created out of CESS on coal produced/imported under the “polluter pays” principle. The fund is used for funding research and innovative projects in clean energy technologies of the public sector or private sector entities, up to 40% of the total project cost. Any project/scheme relating to innovative methods to adopt to Clean Energy Technology and Research & Development are eligible for funding under the NCEF. However, the Biofuels program in India has been impacted mainly due to the sustained and

95 Municipal Administration and Urban Development Department (MA&UD) has come up with an idea of adopting a park by senior functionaries of the GHMC Department to follow best practices to beautify the parks adopted. In this regard, 80 parks in and around the GHMC area have been adopted.

96 Telangana Ku Haritha haram, a flagship program aiming to increase the green belt within GHMC and HMDA limits. Nearly 86 institutions partnered with GHMC and HMDA in successful completion of the program. 25 lakh saplings were planted on 11 July 2016, and the stakeholders took an active role from College students, NSS volunteers, NCC cadets, NGOs.

97 GHMC has 174 green islands and 129 green stretches in the middle and road margins. It was proposed that Companies or individuals can take up extents or stretches for upkeep. In this regard, 12 stretches of this have been adapted by Campbell real page, Chirec school, Chermas and Yashoda Foundation.

98 Hyderabad is a city of lakes with over 145 water bodies sustaining it. Most of them not only act as water sources but also beautify the City. Lake regeneration and upkeep are a priority sector for the Telangana State under the Mission Kakatiya and GHMC.

quantum non-availability of domestic feedstock for biofuel production, which needs to be addressed.

For cleaner environment, fuels blended with domestically produced ethanol could reduce carbon dioxide emissions. This will further reduce GHGs due to using up of crop residue as biofuels which preempts its burning. Further municipal solid waste (MSW) management can be converted into energy with appropriate technology in place. There are multiple advantages in conversion of waste to energy as a ton of waste has potential to result in 20% drop in usage of fuels, create employment opportunities and result in cleaner environment.

Central Government has initiated a policy in which personal vehicles will be charged Green Tax at the time of renewal of Registration Certification after 15 years while transport vehicles older than eight years could be charged at the time of renewal of fitness certificate, at the rate of 10 to 25 per cent of road tax. The recent Vehicle Scrappage Policy of the GoI sets a deadline to scrap vehicles more than 15 year life by October 2021.

In a major step to promote electric vehicles (EV), the Telangana government formally launched the Telangana State Electric Vehicles and Energy Storage Systems Policy 2020-2030. Apart from incentivising manufacturing of electric vehicles, energy storage systems (ESS) and its components, the new EV policy offers 100 per cent exemption in road tax and registration fees for early adopters in different categories of vehicles, including tractors. The TSREDCO (State Nodal Agency) is to evaluate the process to establish public charging stations directly or under the licensee/franchise/PPP model.

Transportation in a metropolitan city is a major issue for any State, and Hyderabad is no exception. Keeping this in view, the Hyderabad Metro Rail was developed as one of the world's largest modern transport systems based upon the PPP model. Hyderabad Metro Rail (HMR) is a 'green' transportation system that will reduce carbon

footprint through efficient power consumption, rainwater harvesting and other processes.

It is designed in ecofriendly, fully automated, and best-in-class transportation framework that will reduce carbon footprints and overall pollution using Regenerative Braking Technology (RBT) and running on Communication Based Train Control (CBTC) technology. The benefits of the Metro rail are it contributes to charging the groundwater through rainwater harvesting. As the HMR runs on electricity, it is estimated that ten thousand tons of CO₂ will be eliminated from the environment as people adopt Metro rail as their preferred mode of transportation. This is also expected to reduce two hundred tonnes of volatile organic compounds from the environment, including twelve tonnes of particulate matter. Moreover, the innovative rolling stock used in the HMR project is expected to reduce 5,000 tonnes of CO₂ equivalent from the surroundings. Using solar energy in the maintenance of the metro stations will further make Metro rail an eco-friendly mode of transport.

Moreover, eco-friendly chemicals are used in housekeeping and maintaining artworks at Metro stations to ensure minimum energy consumption. More than a 1,000 tree planted in and around Metro rail depots will add to the natural ambience and improve the landscape. An estimated one tonne of waste paper per year is recycled and reused by HMR, saving approximately twenty-three trees in a year.

12.3 The Way Forward

Telangana being a newly formed state and deprived of development historically must 'catch up' on the development front.

This task must be performed by balancing the ambition of high economic growth along with sustainability to manage its growth. This task is a double-edged sword for Telangana, unlike other states. Herein lies the need to build in economic, environment and social sustainability into the growth process.

Firstly, as sustainable production and consumption is to do with people, it must transform the behavior of people towards this by taking up more awareness campaigns and gently nudging various stakeholders towards good practices through subtle incentives for achieving sustainable production and consumption by 2030.

Generation of quantifiable data and proper and effective monitoring and evaluation of policies and programmes for achievement of SDG 12 is need of the hour. The way forward for the Telangana State in achieving the SDG 12 in ensuring Sustainable Consumption and Production in the State.

- Capacity building to the authorities and front-line persons working towards achieving Goal 12.
- Ensure the affordability of eco-friendly technologies.
- Increase public expenditure on more ecological projects.

- Framework for integrating the Human Capital and Physical Infrastructure towards Sustainable Consumption and Production.
- Develop capacity building and provide financial assistance to the stake holders to undertake responsible consumption and production
- Undertake grassroots activities to involve people from all walks of lives and try to bring behavioral changes
- Need to promote inter departmental co-ordination and formulate policies for sustainable infrastructure development
- Need to address the policy conundrum of economics of growth and sustainable development in going forward
- Structural changes in the planning process of the polices are need of the hour to mitigate fallout from over exploitation of the resources and to maintain resource efficiency.

Annexure 12.1 Target Wise Mapping of the Indicators to Track the Telangana State Performance towards Achieving the SDG Goal.

National Indicator	State Indicator (SIF)	Base Value	Target		
		2020	2022	2025	2030
Target 12.1 - Implement the 10-year framework of programs on sustainable consumption and production, all countries taking action with the developed countries taking the lead, taking into account the development and capabilities of developing countries.					
12.1. Formulation of national SCP framework and integration of SCP with national/State planning process		The State will formulate the SCP framework as and when directed by the Central Government because it needs to be in line with the Central Government.			
Target 12.3 – By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.					
12.3.2. Post-harvest storage and distribution losses of Central/States Pool stocks of wheat and Rice	12.3.2. Post-harvest storage and distribution losses of Central/States Pool stocks of wheat and Rice (%)	0.29	0.25	0.23	0.20
	Per capita availability of Milk	0.156			
	Per capita availability of Meat	0.230			
Target 12.4 – By 2020, to achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with the agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.					
Developing national secondary resource policy framework.		The State must follow the rules as regulation of the Central government policy, and the same will be accomplished when the policy is formulated at the national level. The Telangana state has not evolved any indicator as such for the target as of now.			
Development of national policy for environmentally sound management of hazardous chemicals and waste.					
Implementation of National Action Plan for fulfilling obligations of various Multilateral Environmental Agreements (MEA) ratified.					

National Indicator	State Indicator (SIF)	Base Value	Target		
		2020	2022	2025	2030
Target 12.5- By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.					
12.5.1. Number of waste recycling plants installed	Number of ULBs with recycling plants	0	92	112	142
12.5.2. Number of municipal corporations using waste segregation techniques	Number of ULBs segregating dry and wet waste	68% 94 ULBs segregating the waste out of 139 ULBs	80	100	100
12.5.3. Number of municipal corporations banning the use of plastic	Number of ULBs banning the use of plastic	100% ULBs banned Single-Use Plastic: 139 Total ULBs: 139	100	100	100
Establishment of DRCC (Dry Waste Collection Centre)	Establishment of DRCC (CDMA)	81% ULBs having plants: 112 Total ULBs: 139	100	100	100
Establishment of DRCC (Dry Waste Collection Centre)	Establishment of DRCC (GHMC)	84	100	180	300
Hazardous waste generated per capita, and proportion of hazardous waste treated, by type of treatment	Hazardous waste treated	0	30	50	80
Target 12.6-Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.					
The proportion of companies publishing sustainability reports.		The Telangana state entrusted to promote sustainable production practices. It is not easy to monitor the same through any indicator. The departments should promote sustainable production practices by highlighting them on their websites and sharing the same knowledge.			
Target 12.7- To promote public procurement practices that are sustainable, in accordance with national policies and priorities					
Green public procurement policy developed and adopted by the Central Ministries / States / UTs (Numbers).		There is no present national policy in this regard. Without that, it cannot be monitored using any indicators. The Telangana State has not evolved any indicator for this target. Also, as and when the Central Government develops the Public Procurement Policy, the State needs to adopt the same.			
Target 12.8-By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature					
Develop icon on sustainable development		The Forest, Ecology and Environment Department is currently celebrating days like Water Day, Environment Day, etc., which are in line with the public's sensitisation about SDGs. The department shall celebrate any other day in this regard as and when notified by the Central or State Government.			
Government to Celebrate year on Sustainable development					

National Indicator	State Indicator (SIF)	Base Value	Target		
		2020	2022	2025	2030
Target 12.a – Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production					
		It was felt that this target is more concerned with the developed countries than developing countries like our Country or the State. No action was proposed for achieving this target either by 2022 or 2030.			
Target 12.b- -To develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and product					
A number of sustainable tourism strategies or policies and action plans implemented with agreed monitoring and evaluation tools.		Currently, no policy can be used to monitor the target; hence there are no State indicators. The tourism department is required to prepare a policy in this regard effectively. It was proposed that the Tourism department should formulate programs to promote the local culture and products.			

Source: Planning Department, Government of Telangana, 2020.

Annexure 12.2 Studies on Impact of Mission Kakatiya

Sl. No	Research organisation	Findings
1	Impact Assessment by NABCONS (NABARD) Study conducted in 2016-17	More extended storage period of water in tanks has resulted in increased fish weight, and so the yield
		There is an increase of household agricultural income by 78.5% in the tank ayacut area
		The tank silt application contributed to an increase in crop yields, reduction in soil erosion, increase in soil moisture retention, leveling of plot sizes
		decrease in consumption of chemical fertilizers by 35 – 50%, which resulted in reduced expenditure on fertilizers by 27.6% over the base year (2013-14)
2	Impact Studies by Institute of Rural Management Anand (IRMA)/ International Water Management Institute (IWMI)	There is an increase of 3.3 months in terms of water availability in wells used for irrigation
3	University of Michigan	The silt reduced fertilizers by 36 percent and increased the crop yield by nearly 50 percent.
		It also reduces greenhouse emissions from less fertilizer use by 50-to-90 percent

Source: Rao et al. (2019) "MISSION KAKATIYA – FOR RESTORATION OF TANKS AND WATER BODIES IN TELANGANA".

Sustainable Development Goal - 13

Climate Action - Combating Climate Change



Vision

Goal 13 aims to “Strengthening resilience and adaptive capacity to climate related hazards and natural disasters across the globe”. Telangana’s customized goals are; 1) aims to increase tree cover from present 24 percent of TGA to 33 percent of TGA in the state by 2030; 2). Increase afforestation, clean and efficient energy systems by 2030.

Achievements

- According to the national SDG report (2019) Telangana state scored 66 out of 100, holds fourth rank after Karnataka, Andhra Pradesh and Odisha states.
- According to State Energy Efficiency Index (EE) (2019), Telangana stood fourth among the states.
- Telangana stood first in energy efficiency in Municipalities, 2nd in cross sectors, achieved 3rd position in domestic sector and transportation, 4th in industries, and 7th in Agriculture.

Challenges

Improving Disaster Resilience: Telangana is vulnerable to climate-induced natural disasters, which affect the vulnerable communities more. Droughts and heat waves are predominant in Telangana. To mitigate the climate change problems, the State needs to undertake various programmes both in the areas of adaptation and mitigation. As far as the policy and capacity building interventions are concerned, the state is moving in the right direction. However, there is a need for huge investment for safeguarding the lives of millions already impacted due to poverty and associated vulnerabilities.

Waste treatment: The state has been undertaking numerous measures to control bio-waste and plastic waste in the state. However, huge investments are required to develop innovative waste processing units.

Accessing green technologies: In light of the Agenda 2030 for Sustainable Development and the Paris Agreement on Climate Change, environmentally sound technologies increasingly gain the attention of the global community due to the critical role they can play in the fight against climate change and in achieving the SDGs. State government line departments collectively need to focus in this direction

13. 1 The Context

Combating Climate Change

India formally approved the historic Paris Agreement and adopted National Action Plan on Climate Change (NAPCC) to achieve the committed objective. Further, set a roadmap to reach the stated objective through eight national missions focusing on major thematic areas such as *agriculture, water, forestry, energy and urban planning*. To fulfil the objectives of NAPCC, the states also prepared State Action Plans on Climate Change (SAPCC). In view of this, Environment Protection Training and Research Institute (EPTRI), Hyderabad had prepared SAPCC for Telangana 2015. Healthy natural and human capital plays a pivotal role in upholding a certain level of economic growth in inter and intra-generational periods. It implies that the development strategies should aim at bringing synergy between economic growth and sustainable ecology. The progress towards achieving Sustainable Development Goals (SDG) will ultimately serve the purpose of Telangana State vision *Bangaru Telangana* (Golden Telangana) by 2030.

Synergy between MDG and SDG

The life of planet has been adversely affected by climate change in recent decades. The scientific community believes that the anthropogenic factors are significantly responsible for the climate change. Telangana State is one of the fastest growing states in country. Natural and human capital should not be exploited in the process of development for future needs. The Millennium Development Goals report (2017) emphasize both natural and human environments sustainability in goal 7 titles 'Ensure Environmental Sustainability.' Goal 13 also aims to "Strengthening resilience and adaptive capacity to climate related hazards and natural disasters across the globe". Therefore, one can find the synergy between SDG 13 and MDG 7.

Global and Indian Scenario

According to National Aeronautics and Space Administration (NASA), temperature across the globe in 2017 were 0.90 degrees Celsius warmer than its mean temperature.⁹⁹ In business as usual, the world mean surface temperature is projected likely to increase 3 degrees Celsius this century-with some areas of the world expected to be warm even more and the vulnerable communities to be affected the most. Each one degree Celsius of temperature increase in global mean temperature is estimated to reduce average global yields of wheat by 6 per cent, rice by 3.2 per cent, and maize by 7.4 per cent.¹⁰⁰

India is one the major victim of climate change due to its geographic diversity, climate regimes and regional and local weather conditions. This makes India more vulnerable to climate change and related risks. The Intergovernmental Panel on Climate Change (IPCC) reveals that India is one of the most vulnerable countries in the world to global warming and will face the challenge of climate change in the coming decades. The report

states that agricultural economies such as India will be adversely affected due to the consequences of global warming- including intense heat waves, floods, droughts, water stress, and reduced food production (GoI, 2020). In the context of Telangana state, major climate change issues arise in agriculture and forestry sectors due to droughts and heatwaves (EPTRI, 2015). India is 4th largest emitter of greenhouse gases with 5.3% of global emissions. However, India is committed to reduce emissions intensity of its GDP by 33.4% by 2030.

13.2 SDG-13 Indicators and Targets

Goal 13 focuses on the "urgent action" required to "combat climate change and its impacts", hence incorporating both mitigation and adaptation mechanisms.

Table 13.1 Targets for the SDG

Sl. No	Indicator
13.1	Strengthening resilience and adaptive capacity to climate related hazards and natural disasters across the globe
13.2	Integrating climate change measures into national policies, strategies, and planning
13.3	Improving education, raising awareness and human institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning

Source : UNDP

Telangana, a Good Performer

As cited earlier, upholding natural and human capital plays a key role to maintain economic growth for inter and intra-generational periods. Millennium Development Goals (MDG) in Telangana report (2015) emphasize that the impact of climate change not only plays a key role in global warming and greenhouse gas (GHG) emissions, but it also affects many other cross cutting sectors directly or indirectly.

99 <https://svs.gsfc.nasa.gov/12828> (accessed on 17 Nov. 20)

100 <https://in.one.un.org/page/sustainable-development-goals/sdg-13/> (accessed on 17 November 2020)

As far as goal 13 is concerned, Telangana state is among the good performing states in the country. The Sustainable Development Goals report (2019), classified states into 4 categories including achiever, front runner, performer, and aspirant in the context of action on the climate change. Telangana state scored 66 out of 100, holds forth rank after Karnataka, Andhra Pradesh, and Odisha. Telangana is one of the good performing states in terms of energy efficiency. Indian States and Union territories have classified as 'Front Runner', 'Achiever', 'Contender' and 'Aspirant' based on utilization of energy efficiency. According to State Energy Efficiency Index (EE) (2019), Telangana stood fourth among the states and finds a place in the 'Contender' category. Moreover, Telangana gets the appreciation for energy efficiency in the sectors of Buildings, Industries, Municipalities, Transportation, Agriculture, DISCOMs, and cross sectors. Telangana stood 1st in energy efficiency in Municipalities, 2nd in cross sectors, achieved 3rd position in domestic sector and transportation, 4th in industries, and 7th in Agriculture. Telangana is recognized, especially for its street lighting programme and audit. The state has incorporated energy efficiency norms in public procurement guidelines for lighting and uses and made energy audits mandatory for commercial building consumers. On the other hand, TSAPCC report has developed the 'Adaptive Capacity'¹⁰¹ index for the Telangana and its districts- Hyderabad and Rangareddy districts show high adaptive capacity whereas Mahbubnagar district has a low adaptive capacity.

Sustainable biodiversity contributes a long range of ecosystem services to human beings and to maintain this, the state Government has constituted the Telangana State Biodiversity Board (TSBB) and directed it to constitute biodiversity management committees (BMCs) and Peoples Biodiversity Registrar (PBRs) at the disaggregate level. The committed objectives have been achieved fully by 2020.

Telangana state also has undertaken multiple measures to control air, solid waste and water (especially, lake) pollutions. The state had set up a board to monitor ambient air quality at 22 stations situated across the Telangana State under National Air Quality Monitoring Program (NAMP). The parameters monitored are: PM₁₀, SO₂, NO_x, CO, Ammonia, Heavy metals, etc. On the other hand, the Telangana State Pollution Control Board (TSPCB) has initiated and permitted 11 Common Bio-Medical Waste Treatment Facilities (CBWTFs) in Telangana for collection and safe disposal of the Bio-Medical Waste. These plants daily capacity is an average 20,472 Kg/day of bio-medical waste (BMW). The TSPCB is also monitoring rivers and its tributaries, lakes, ground water, drains and *cheruvus* (Village tanks) under National Water Quality Monitoring Programme (NWMP) sponsored by Central Pollution Control Board (CPCB). Currently under this programme, 210 stations across the State are being monitored regularly, which include 52 locations in Rivers, 100 locations in Lakes/Tanks/Cheruvus, 12 locations in STPs and 46 ground water (bore well) locations. Additionally, the Board is carrying out monitoring of 185 lakes in GHMC area. Moreover, there are 4 wastes-to-energy plants established in Telangana with capacity of 35.6 MW. A waste-to-Energy plant with a capability of 19.8 MW has also been established at Jawaharnagar.

SDG 13 and Targets

The ultimate vision of Telangana state is a "comprehensive, inclusive and holistic development of its people" also known as *Bangaru Telangana* (Golden Telangana). To achieve the targeted vision the sustainable natural and human capital plays key role. The negative externalities due to climate change is more vulnerable to weaker sections of the society, especially rainfed dominated areas like Telangana. According to the SDG report (2019) the goal 13 is inter connected to multiple goals (say, 11 SDG goals). The Telangana state specific goals

¹⁰¹ Here adaptive capacity is an aggregate of several determinant indices are including economic status, demographic status, infrastructure status, education status, and health status.

sets on climate action are as follows: 1) *Reduction of the impact of climate change on forest green cover, biodiversity and water resources*; 2) *Reduction of the impact of climate change on household incomes, particularly agriculture and its allied sectors*; 3) *Protection of vulnerable population against climate induced events*; 4) *Reduction of the impact of climate change on human and animal health*; 5) *Achievement of environmental sustainability, including mitigation measures* (EPTRI, 2015).

Government Interventions

Strengthen Resilience and Adaptive Capacity to Climate Related Hazards and Natural Disasters in Telangana

Telangana state has witnessed frequent droughts over the years. The Telangana State Action Plan on Climate Change (TSAPCC) (2015) assessed the climate trends in Telangana. According to TSAPCC (2015) report, climate vulnerability varies across regions and communities. Drought plays a predominant role in assessing climate vulnerability index in Telangana¹⁰². The TSAPCC report reveals that the physical exposure of drought value is about 0.40 for the overall State. Mahabubnagar, Nalgonda, Karimnagar and Adilabad districts are exposed to climate vulnerability. The Providing Regional Climates for Impacts Studies (PRECIS) model projects an increase of mean annual temperature up to 30°C in summer. Nalgonda, Karimnagar, Adilabad and Warangal districts are going to be affected more in the period between 2050 and 2080.

Moreover, the model projection shows that the rainfall varies over 2mm/day and varies across agro-climatic zones. Northeast rainfall shows a modest increase in the rainfall in Northern part of Telangana whereas slight decrease in the

southwestern part of Telangana in future (i.e. projected for 2050 and 2080 periods) compared to the present-day climate, while the temperature changes appeared more coherent across the model outputs of around 4°C for different emission scenarios). The projected rainfall indicates possible occurrence of drought in Mahbubnagar district between the 30-year period. Telangana¹⁰³ is one the higher per capita emitting states. In 2005, Telangana had emitted 2-4 tonnes of CO₂ equivalent per capita and moved to into above 6 tonnes of CO₂ equivalent per capita emissions category in 2013 period. Forestry Survey of India (FSI) (2019) the capacity of carbon sequestration is 154842 thousand tonnes (73.77/ha) in 2019.

Integrate Change Measures into National/State Policies, Strategies and Planning

Telangana is one of the front runners to mitigate climate change in the country and line up its TSAPCC with India's National Action Plan on Climate Change (NAPCC). The State has also developed this plan in consultation with relevant State line departments. Within TSAPCC, the State government has outlined priority areas of intervention to promote resilience and extend it to climate change adaptation, as well as adaptation measures to be implemented in the future within priority areas of action.

As highlighted in SDG (2019) report, the climate change impact is expected in many sectors, and it needs several collective and coordinated measures for making appropriate interventions for adaption to climate change.

Resilience and Adaptability Interventions

Telangana has taken an active role in climate adaptation measures.

102 The Vulnerability term is often used to describe the potential (adverse) effects of climate change on ecosystems, infrastructure, economic sectors, social groups, communities and regions. According to IPCC, Vulnerability to Climate Change is refers "the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude and rate of climate change and variation to which a system is exposed, it's Sensitivity, and it's Adaptive Capacity." Here it is represented by the occurrence of the climate shocks like droughts, heatwaves and floods (EPTRI, 2015).

103 Telangana refers to the unified geographical and administrative entity of Andhra Pradesh.

Afforestation: As per revised 2002 State Forest Policy, Vision 2020, State Forest Department implements various development schemes to protect and develop existing forests, to improve its productivity and economic value. The main objectives of programmes are Community Forest Management, National Afforestation Programme (NAP) (i.e., Centrally Sponsored), RIDF Projects, Soil & Moisture Conservation, Social Forestry, Wildlife Management and Human Resource Development, which aim at enriching existing low-density forests and take steps to alleviate rural poverty. The programmes are also aiming at developing peripheral Trenches, Contour Trenches, Check dams, Rocks fill dams, Percolation tanks etc. in forest areas. Telangana has initiated several programmes viz. *Telanganaku Haritha Haram* (THH), afforestation, soil and moisture conservation program, *Vana Samraksha Samithis* (VVSs) and *Palle Prakrithi Vanam* (PPV) programmes to improve tree cover in Telangana. *Telanganaku Haritha Haram*, a flagship programme of the Government Telangana, aims to increase tree cover from present 24% of TGA to 33% of TGA in the state. The thrust areas to achieve the above are two-fold; one, initiatives in notified forest areas; second, initiatives in areas outside the notified areas. Under THH programme 15.86 crore plants were planted in 2015-16 year, and 31.67 crore and 15.10 crore plants were planted in 2016-17 and 2017-18 years respectively (GoT, 2018). The GoT initiated the *Palle Prakrithi Vanam* to improve the green cover area in village habitations across the state.

Agriculture: Agriculture and its allied sectors are more sensitive to climate change, especially rainfed agriculture given the potential natural calamities that include intense heat waves, floods, droughts, and water stress. GoT initiated several programmes to address climate sensitivity to agriculture like soil and water conservation programme, *Rythu Bandhu*, crop insurance, promotion of millets, micro-irrigation, and *Mission Kakatiya*, soil health cards and farm loan programmes.

Energy: The demand for energy consumption will further grow in future due to population growth, urbanization, and industrialization. It is necessary to find ways and means to generate and utilize energy efficiency. Telangana is proactive to increase its installed capacity of renewable energy by 2030 and the State had initiated several policies to mitigate carbon emission in Telangana viz., 'Telangana State Solar Policy' (2015), 'Telangana Wind Power Policy' (2016) and 'Telangana Electric Vehicle Policy' (2017).

Irrigation: Irrigation expansion is one key adaptation measure to climate change. The state is geographically located in a rain-shadow area, resulting in frequent droughts. The Government has accorded highest priority to increase irrigation infrastructure for improving the economic conditions of the farmer. The irrigation infrastructure development has been taken up in two categories; one is major and medium lift irrigation projects viz. Kaleswaram lift irrigation project, Dr. BR Ambedtkar Pranahitha project, Palamuru Rangareddy LIS, Sitarama LIS, Sri Ramaraju Vidyasagar Rao Dindi Lift Irrigation Project, Bhaktha Ramadasu LIS etc.; second, Mission Kakatiya (also known as Mana Ooru - Mana Cheruvu) programmes. The *Mission Kakatiya* is a flagship program of the State and aims at retrieving the lost role and importance of minor Irrigation in the state with community participation, for ensuring sustainable water security.

Waste Management: The State has established 4 waste-to-energy plants in Telangana with capacity of 35.6 MW. Another Waste-to-Energy plant of capability 19.8 MW has been established at Jawaharnagar. There are 11 Common Bio-Medical Waste Treatment Facilities (CBWTFs) for collection and safe disposal of the Bio-Medical Waste. Daily an average 20,472 Kg/day of BMW is managed in the state.

Pollution control: TSPCB is implementing various measures to prevent and control pollution in the state. The State Board is monitoring ambient

air quality at 22 stations situated across Telangana under NAMP Programme. The parameters monitored are: PM₁₀, SO₂, NO_x, CO, Ammonia, Heavy metals, etc. The TSPCB is monitoring rivers and its tributaries, lakes, ground water, drains and *cheruvus* under National Water Quality Monitoring Programme (NWMP) sponsored by CPCB. Currently under this programme, 210 stations across the State are being monitored regularly, which include 52 locations in Rivers, 100 locations in Lakes/Tanks/Cheruvus, 12 locations in STPs and 46 ground water (bore well) locations. Additionally, the Board is carrying out monitoring of 185 lakes in GHMC area.

Biodiversity: Biodiversity Conservation Society of Telangana (BIOSOT) has been constituted by the Govt. vide GO Ms. No. 25/EFS&T (For.I) Dept., Dt: 24.11.2014 as per the orders of the Hon'ble Supreme Court of India to implement the conservation measures in Wildlife Sanctuaries in Telangana. The Telangana State Biodiversity Board has constituted Biodiversity Management Committees (BMCs). Now there are 13,426 BMCs active at all the local bodies (Gram Panchayats, mandal, municipality and Zilla Parishad).

Improve Education, Awareness-Raising and Human and Institutional Capacity on Climate Change Mitigation, Adaptation, Impact Reduction and Early Warning

In line with the NAPCC guidance on development of SAPCC, EPTRI conducted workshops for stakeholder consultation at Hyderabad on 23rd December 2010 to identify the key climate change related issues faced by various sections and strata of the society. Participants ranging from academicians, researchers, Government officials, private sector employees, NGO professionals, social activists, students, and local citizens were invited, for proper representation of stakeholders. Creating awareness about nature, conservation and wildlife management forms an important aspect of governance in the state.

- Nature camps are conducted for school children with special emphasis on Government schools. An innovative program named *Vanadarshini* is being implemented in all divisions which involve organizing group visits for school children, especially from Government schools to wildlife sanctuaries and other forest areas to create awareness over conservation.
- The Telangana State Forest Academy, Dulapally, has been conducting several training programmes to create awareness among the officers and the people.
- During the year 2018-19, the Academy has organized (21) In-Campus training programmes covering (711) participants; (11) Off-Campus training programmes covering (1304) participants and (11) workshops covering (822) participants.
- Similarly, under *Telanganaku Haritha Haram* (TKHH), (01) Immersion Training on "Forest Management Techniques and ANR" was held during 2018-19 covering 78 participants.
- Further, during the year 2018-19, (5) Training Programmes on refresher courses sponsored by GOI were conducted in which 122 IFS officials and staff of the foreign department participated.
- In addition to the above, long term induction training courses are organized for Forest Range Officers (18 months), Forest Section Officers (12 months) and Forest Beat Officers (6 months). As part of the course, the trainees have undertaken more than 250 seminar project works and carried out several field level forest management assignments covering a wide range of issues.

Efficacy of interventions and the Challenges in achieving the targets and the SDG

Though the Government has initiated several programs to mitigate the impact of climate change on human beings, it needs to establish the efficacy of government intervention to climate adaptation measures.

13.3 The Way Forward

Recent IPCC assessment report emphasised that the consequences of climate change can be mitigated or reduced by adopting appropriate adaptation and mitigation policies. As reported, the state Government has formulated several measures in this direction, and various line departments have undertaken these initiatives. Agriculture and its allied sectors are more sensitive to climate hazards. Increasing area under watershed treatment, increasing area under protective irrigation, encouraging climate smart agriculture, increasing crop diversity practices improvement may sustain agriculture and food security by 2030. To achieve the committed objectives by 2030, the State needs to increase capacity of installed green energy. Moreover, the green energy policies should be implemented efficiently to mitigate

Carbon emissions. The proper implementation of afforestation programmes will solve many climate change problems in the long run.

Forest and agriculture departments and pollution control board should lead other line departments to achieve goal 13. Since the goal 13 implications cut across various sectors, there is a need for convergent action for the key focused areas within SDGs. The state should encourage implementation of coordinated activities by all the concerned departments. They should work together and undertake innovative programmes to create awareness on climate change implications and mitigating mechanisms. The concerned line departments also need to work collectively at ground level to improve climate adaptive measures to be undertaken by the vulnerable sections of society.

Annexure 13.1 PRECIS Model Climate Variation Projection in Telangana

Category	Projections for 2050s	Projections for 2080s
Mean annual surface air temperature variability	Over Telangana, Surface air temperature is projected to 29.0° C to 31.5°C. Nalgonda district would be hub of heat source	Projected to 31.5° to 32.5°C
Projected spatial distribution of summer surface air temperature Over	Adilabad, Karimnagar, Warangal and Nalgonda districts are projected to increase up to 3°C.	Adilabad, Karimnagar, Warangal and Nalgonda districts are projected to increase up to 3°C.
Projected spatial distribution of Southwest monsoon rainfall	Southwest monsoon rainfall varies from 2 mm/day (parts of Mahbubnagar district) to 14 mm/day (parts of Karimnagar and Adilabad districts)	Southwest monsoon rainfall varies from 2 mm/day (parts of Mahbubnagar district) to 14 mm/day (parts of Karimnagar and Adilabad districts). The projected rainfall indicates possible drought situation over Mahbubnagar district
Projected spatial distribution of Northeast monsoon rainfall over Telangana	Over Telangana State, there is slight increase of rainfall by 1.0-2.0 mm/day	Over the state there is slight increase of rainfall by 1.0-2.0 mm/day

Note: The main climate change future scenarios are constructed for 2050s (Year 2041 to Year 2070) and 2080s (Year 2071 to Year 2090).

Source: EPTRI Climate Action Report, 2015

Annexure 13.2 Targets, Indicators with Base Value with the Targets Till 2030

Sl. No.	National Indicator	Target	Indicators	Base Line Year	Base Value	2030
1	13.1	Strengthening resilience and adaptive capacity to climate related hazards and natural disasters across the globe	Departure from normal precipitation	2020	27.5° to 30.0 C	-
			No. of incidences of vector born diseases	-	-	-
			Occurrence of heatwaves	-	-	-
			Area brought under protected irrigation(acres)	2015	50545	-
			Crop affected attributed to climate related hazards and natural disasters	-	-	-
			Crops affected attributed to droughts	-	-	-
			Forest area covered	2015	24	30
			Energy efficiency	-	-	-
			Introduction of micro irrigation to replace food Irrigation	-	-	-

Sl. No.	National Indicator	Target	Indicators	Base Line Year	Base Value	2030
2	13.2	Integrating climate change measures into national policies, strategies, and planning		-	-	-
3	13.3	Improving education, raising awareness and human institutional capacity on climate change mitigation, adaptation, impact reduction, and early warming	Awareness generation and training of farming and other vulnerable communities in climate change adaptation and mitigation strategies	-	-	-

Source : UNDP

Annexure 13.3 Targets, Nodal Department and Data Source

S. No.	National Indicator	State Indicator	Data source	State Nodal Department
1	13.1	13.1	TSAPCC	EFST, Revenue, Agriculture and Health and Family Welfare
2	13.2	13.2	EFST, Energy and Revenue	EFST, Energy and Revenue
3	13.3	13.3	EFST, Energy and Revenue	EFST, Energy and Revenue

Note: TSAPCC-Telangana State Action Plans and Climate Change; EFST- Environment, Forests, Science and Technology

Sustainable Development Goal - 14

Conserve and Sustainably Use the Oceans, Seas, and Marine Resources for Sustainable Development



Vision

A landlocked state's special emphasis on underwater resources: Telangana has adopted the Vision to achieve the objectives of SDG Goal 14 - to conserve and use underwater resources sustainably – with a slew of policy interventions and focused strategies. These are aimed at promotion of fish and prawn production, strengthening dry port since the state has no coastal linbe and development of in-land fisheries.

Achievements

- Telangana is a landlocked State but has plenty of water resources suitable for inland fisheries and aquaculture.
- It has the third-largest inland water resources in India with 77 reservoirs besides 4647 tanks under the fisheries department and 19465 tanks under the panchayats.
- There are 661 aquaculture ponds covering an area of 830 ha and 4818 km long canals and rivers.
- Tanks constitute major share of inland water bodies in the state whereas significant area under reservoirs are found in a few districts like Nirmal, Sangareddy, Nizamabad, and Nalgonda.
- The government is also engaged in institutional and capacity building activities like strengthening cooperative societies to develop inland fisheries. The fishermen and women have been organised into different fisheries cooperative organisations

Challenges

Overlooking the role and contributions of inland fisheries may pose a severe challenge in achieving sustainable development goals. The creation of additional water bodies under various irrigation schemes and the rejuvenation of existing water bodies under the Mission Kakatiya project has provided ample opportunities for the State to develop inland fisheries.

14.1 The Context

Under Water Resources

Oceans are the most diverse and vital ecosystem on earth. The oceans cover over three-quarters of the earth's surface and represent 99 per cent of the living space on the planet by volume. They contain nearly 200,000 identified species, and over 3 billion people depend on marine and coastal biodiversity for livelihoods. It is estimated that the market value of marine and coastal resources and industries to be around US\$ 3 trillion, contribution about 5 per cent of global GDP. It plays a vital role in buffering global warming impacts by absorbing about 30 per cent of carbon dioxide produced by humans. However, over 40 per cent of the oceans are affected by pollution, depleted fisheries, loss of coastal habitats and other human activities. Therefore, sustainable management of oceans is a crucial feature of a sustainable future.

14.2 SDG 14 Targets and Indicator

Target 14.1: *By 2025, prevent and significantly reduce marine pollution of all kinds, from land-based activities, including marine debris and nutrient pollution*

Target 14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and act for their restoration in order to achieve healthy and productive oceans

Target 14.3: Minimise and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

Target 14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported, and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

Target 14.5: By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

Target 14.6: By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported, and unregulated fishing and refrain from introducing new such subsidies, recognising that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation

Target 14.7: By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

Target 14.7a: Increase scientific knowledge, develop research capacity, and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries

Target 14.7b: Provide access for small-scale artisanal fishers to marine resources and markets

Target 14.7c: Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want

Source: UNDP

The protection of oceans and the lives that depend on it is a global responsibility. SDG Goal 14 commits the countries to engage in achieving the sustainable management of marine ecosystems. India, which has a coastline length of about 7517 km, has taken many initiatives to conserve marine ecosystems. Since SDG 14 concerns the marine ecosystems, it applies to only nine coastal states. Therefore, indicators and their values under Goal 14 have not been used to estimate the composite SDG India Index Score. Nevertheless, some of the significant measures undertaken to conserve oceans include containment of marine pollution, conservation of marine and coastal ecosystems, marine and coral reef conservation, and sustainable deep-sea fishing. It promotes Blue Economy through ambitious projects like *Sagarmala*, which aim to promote port-led development and sustainable development of coastal communities.

Life Below Water: the Inland Fisheries

The inland fisheries that employ about 10 per cent of the world population and provide food to billions of people are notably absent in SDGs discussions. As per FAO (2014) inland fisheries refers to the harvesting of aquatic organisms from inland waters, lakes, rivers, streams, canals, reservoirs, and other landlocked waters. It is a significant livelihood activity of the rural population, especially in developing countries and is an essential source of nutrients which is challenging to obtain from other dietary sources, thus addressing the 'hidden hunger'. Moreover, fish is considered high in

protein content and less in cholesterol, making it a preferable source of animal protein compared to other sources of meat like chicken or mutton.

It is now widely recognised that inland fisheries play an integral role in multi-dimensional efforts to alleviate poverty. Studies that have examined the relationships between inland fish, sustainable fishing and functioning of freshwater ecosystems highlight synergies across SDG 1, SDG 2, SDG 6, SDG 12 and SDG 15 that can be achieved with the inclusion of these overlooked inland fishery services. In their study, Lynch et al. (2020) analysed the contributions of inland fisheries to SDGs by scoring the potential contributions of inland fishery resources towards various SDG targets and summarising them into a strongly positive, and bidirectional relationship. Further, the inland fisheries have the strongest positive association with SDG 2 (Zero Hunger), SDG 6 (Clean Water and Sanitation), SDG 12 (Responsible Consumption and Production) and SDG 15 (Life on Land). Inland fisheries are critical sources of food and the protection of freshwater ecosystems for inland fish improves water quality for human use.

The study observed positive associations between inland fishery services and SDG 8 (Decent Work and Economic Growth), SDG 13 (Climate Action) and SDG 14 (Life Below Water). In addition to the contribution of inland fisheries to food and income, inland capture fisheries have a lower carbon footprint and lower environmental costs than the production of other animal proteins.

Inland fisheries also have the most robust bidirectional relationships with SDG 1 (No Poverty), SDG 5 (Gender Equality) and SDG 7 (Affordable and Clean Energy). For example, take the case of SDG 1. On the one hand, promotion of inland fisheries can contribute to poverty alleviation and income growth. On the other hand, promoting ecotourism and recreational fishing that

could provide income and livelihood opportunities might reduce access of local people to the resource. Recognising these bidirectional relationships are essential for the more holistic development of inland fisheries.

Inland fisheries in India covers fishing in freshwater, brackish water, estuarine, natural and human made water bodies etc. Total fish production increased from 0.75 million tonnes at all India level during 1950-51 to 12.9 million tonnes by 2017-18. During this period, the share of inland fisheries to total fish production has increased from 29 per cent to about 70 per cent. This increase in inland fish production led India to emerge as the second-largest fish producer globally and in aquaculture production. India contributes to about 6.56% of the global fish production and fisheries contribute about 1% to the country's Gross Value Added (GVA) and over 5.37 per cent to the agricultural GVA. (GoI, 2019).

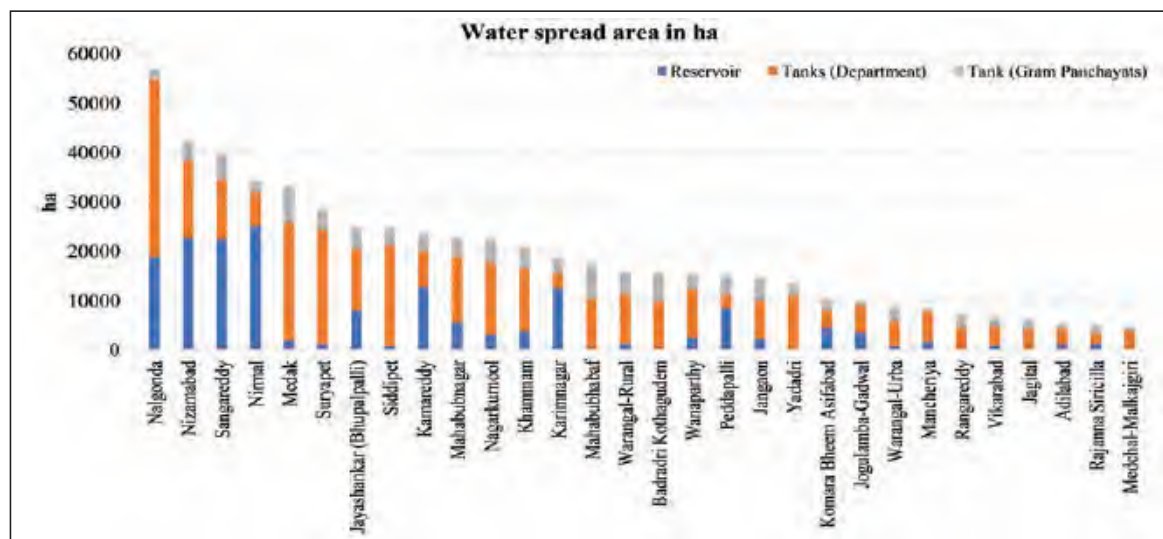
Inland Fisheries in Telangana

Telangana is a landlocked state but has plenty of water resources suitable for inland fisheries and aquaculture. It has the third-largest inland water resources in India with 77 reservoirs besides 4647 tanks under the fisheries department and 19465 tanks under the panchayats. These reservoirs and tanks cover 167914 ha, 304160 ha and 100093 ha respectively (GoT, 2018). Reservoirs and tanks under the Fisheries Department constitute more than 80 per cent of the water bodies for inland fisheries. As a result, the inland fisheries which are invisible but integral to achieving Sustainable Development Goals is a significant focus area in Telangana. Inland fisheries' scope has increased with the initiation of large-scale irrigation projects like Kaleshwaram and Mission Kakatiya for restoring all the minor irrigation tanks and lakes. There are also 661 aquaculture ponds covering an area of 830 ha and 4818 km long canals and rivers.

Table 14.1 Inland water bodies in Telangana

Sl.No.	Type of Water Resource	In Nos	Water Spread Area (in Hectares)
1	Reservoirs	77	1,67,914
2	Tanks vested with Fisheries Department	4,647	3,04,160
3	Tanks vested with Gram Panchayats	19,465	1,00,093
	Total	24,189	5,72,167

Source: Government of Telangana (2019)

Figure 14.1 District-wise area of inland water bodies in Telangana

Source: Government of Telangana (2019)

The figure shows that tanks constitute major share of inland water bodies in the State whereas significant area under reservoirs are found in a few districts like Nirmal, Sangareddy, Nizamabad, and Nalgonda.

The production of capture and culture fisheries in Telangana crossed 2.94 lakh tonnes in 2018-19 with 5.7 lakh hectares of water spread area (Department of Fisheries, Telangana). The State aims to increase fish production to 3.5 lakh tonnes by creating an

enabling environment for integrated development of fisheries' in the State. Primary fish species are Catla, Rohu, Mrigala, Grass Carp, Common carp, Silver carp, Tilapia and Channa Striata (Murrel). In addition to various types or varieties of fish, prawn and crabs are also found. While Telangana stands 8th in the inland fish production in the country with an average of 2.5 lakh tonnes per annum, fish consumption is only about 7 to 8 per cent.

Table 14.2 List of Indicators for State Indicator Framework (SIF) for SDGS : Goal 14: Life Below Water

Sl.	Goal	Target	National Indicator	State Indicator (SIF)	Data Point Position	Achievement 2019-20	Target 2022-23	Target for 2025-26	Target 2030-31	Periodicity (Monthly / Quarterly / Half-yearly, Yearly)
1	G#14: Life Below Water		No of Fisheries cooperatives	No of Fisheries cooperatives	Direct Value	4452				Yearly
2	G#14: Life Below Water		Number of Tanks used for fisheries activities	Number of Tanks used for fisheries activities	Direct Value	24189				Yearly

Inland Fisheries Development in Telangana: Vision and Initiatives

The vision of the Government of Telangana is to "increase fish production and productivity by providing backward and forward linkages, enhancing

livelihoods of fishers, achieving self-sufficiency in production of fish seed, ensuring availability of fish to the consumers at an affordable price and in hygienic condition by improving the marketing infrastructure and implementing welfare programs".

Table 14.3 Target and Achievements of Fish and Prawn Production and Value

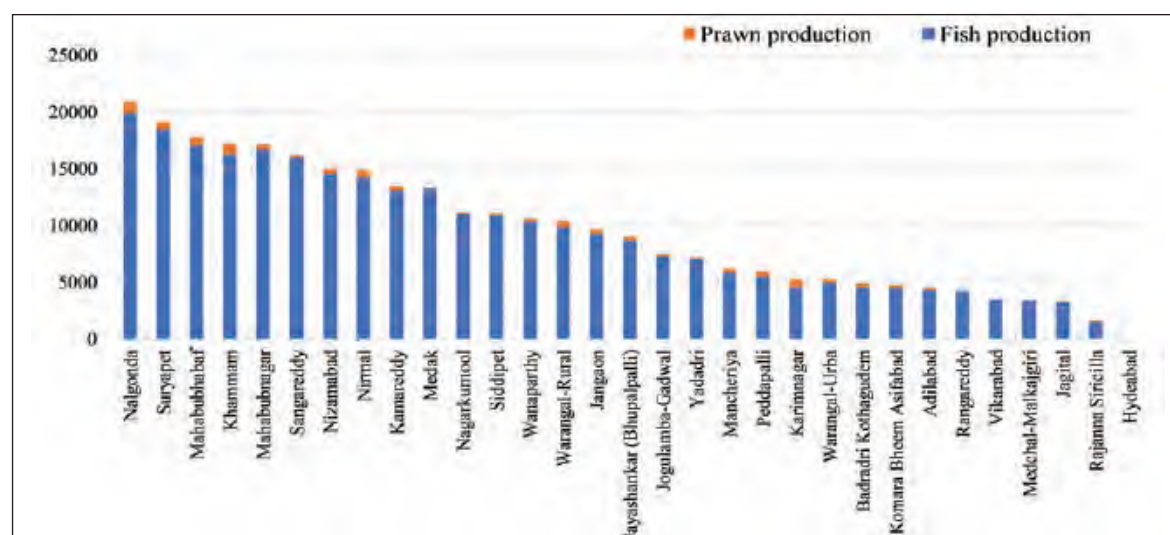
Sl. No	Year	Fish Target (in tons)	Fish Achmt. (in tons)	Prawn Target (in tons)	Prawn Achmt. (in tons)	Total Target (in tons)	Total Achmt. (in tons)	Fish Value (Rs. in Crores)	Prawn Value (Rs. in Crores)	Total Value (Rs. in Crores)
1	2014-15	284400	260010	7330	8352	291730	268362	2431	206	2637
2	2015-16	312180	228185	7866	8567	320046	236752	2397	249	2646
3	2016-17	345068	193732	8495	5189	353563	198921	2111	142	2252
4	2017-18	270000	262252	10000	7782	280000	270035	3419	198	3617
5	2018-19	320000	284211	12000	9998	332000	294209	3742	272	4014
6	2019-20	342167	299869	12600	10453	358820	310322	4332	338	4670
7	2020-21	326688	210120	12000	7317	338688	217437*	* To be received		

* Achievement Upto November 2020. Source: DoF, 2020

The inland fish production target for the year 2014-15 was 291730 tonnes (284400 tonnes for fish and 7330 tonnes for prawns), and the achievement was 268362 tonnes including of both fishes and prawns. However, during the year 2016-17, the gap between target production and achievement was considerable due to poor monsoon. For the year 2019-20, the target was 358820 tonnes

(342167 tonnes for fish and 12600 tonnes for prawns) while the achievement was 310332 tonnes. The value of fish and prawn increased remarkably from Rs 2637 crores in 2014-15 to about Rs 4670 crores by 2019-20. It is expected to cross Rs 5000 crores during 2020-21 despite the disruptions caused due to the spread of COVID 19.

Figure 14.2 District-wise production of inland fish and prawn in Telangana during 2019-20 (in tonnes)



Source: Government of Telangana (2019)

As seen in the Figure 14.2, at least 8 districts produce more than 15000 tonnes of fish and prawn in a year in Telangana and another 6 districts produce over 10000 tonnes in a year. In most parts of Telangana, inland fisheries activities, including capture and culture, have been carried out in traditional ways. The State government has recently implemented various schemes, both State and Centrally sponsored ones to overcome some of the constraints in production and enhance the livelihood of those who depend on fisheries. The State sector schemes focus on the development of Fisheries and strengthening of Fish Seed Farms. In contrast, the Centrally sponsored schemes have been carried out under the Blue Revolution and National Scheme for Fishermen Welfare.

Enhancing Production and Productivity

There are 28 fish seed farms in the State out of which seven farms have hatchery facilities to produce fish seed, and the remaining are fish seed rearing farms. Due to non-availability of required freshwater fish seed, the government used to procure and import seeds from private farms. Since then, the State has witnessed the emergence of private players in the fish rearing business. At present, there are 11 fish seed production and rearing farms in the private sector in the State besides several small hatcheries coming up, which enabled the State to procure 3000 Lakhs advance fry for 2019-20. Seed stocks increased from 27.85 crore seeds in 3,939 water bodies in 2016-17 to 49.15 crore seeds by 2018-19 in 10,776 water bodies. The seedlings of prawn juveniles stock increased from 1.08 crore seeds during 2017-18 in 11 water bodies to about 3.19 crore seeds in 2018-19 in 24 water bodies. Under the state scheme for the development of Fisheries, the government has supplied fish seed and prawn juveniles on 100% grant to enhance fish and prawn production. Recently fish seed/prawn juveniles with 35-40 mm in seasonal water bodies and about 80-100 mm in perennial water bodies have been stocked in all the water bodies in the State. The stocking density works out to be 3000 per ha of effective water spread area in

seasonal water bodies and between 500 to 2000 in perennial water bodies. The size of perennial water bodies ranged from less than 1000 ha to above 5000 ha.

Promotion of cage culture in reservoirs, construction of Fish Brook Bank, Construction of Re-circulatory Aquaculture Systems (RAS), construction of fish seed hatcheries, new fish ponds, seed rearing units and fish markets have been carried out under the Centrally sponsored scheme Blue Revolution or the Neel Kranti Mission. Recently, the Pradhan Mantri Matsya Sampada Yojana, a scheme to bring about the Blue Revolution through sustainable and responsible development of the fisheries sector was launched in India. The project intends to address critical gaps in fish production and productivity, quality, technology, post-harvest infrastructure and management, modernisation and strengthening of the value chain, traceability, establishing a robust fisheries management framework and fishers' welfare. The State adopted Cage culture by looking at the success of this method in Jharkhand. After exposure visit to Chandil reservoir in Jharkhand, State government officials identified six sites for demonstration project such as the Koilsagar in Mahbubnagar, Pocharam in Medak, Nizamsagar and Sri Ram Sagar in Nizamabad, Kadem reservoir in Adilabad, and Lower Maneru Dam in Karimnagar districts. The project's total outlay was Rs 1.67 crores with 40:60 per cent assistance from the NFDB and the state government. This project aims to provide protein-rich fish-based products in the domestic market at affordable prices, and this system will also generate employment to local fishers.

Schemes for the Welfare of Fishers

Two types of insurance are provided for the fisher community under the National Scheme for Welfare of Fishermen and under one Saving-cum-Relief scheme. The Group Accident Insurance Scheme for Fishermen was converted as the Pradhan Mantri Suraksha Bhima Yojana (PMSBY) with effect from July 2017. The project covers about 311956 active fishers in the age group of 18-70 years. Under this

scheme, the sum assured is Rs 2.0 lakhs in accidental death or permanent disability and Rs 1.0 lakh for partial disability. The premium is paid equally by the state and central governments. Apart from this, the state government of Telangana is paying, additional Rs. 4.00 lakh as ex-gratia to the dependents of deceased fishers. FISHCOPFED is the implementing agency, and for the year 2018-19 state government has paid Rs. 18, 71, 736 towards premium for insuring 3.12 lakh active members in the state,

Under the Pradhan Mantri Jeevan Jyothi Bheema Yojana (PMJJBY), a sum of Rs.2.00 Lakhs is paid for fishers in the age group of 18-50 in the event of natural death. A scholarship of Rs 2400 per year is also given to two children from 9th to 12th standard under this scheme. A premium of Rs.330 per fishers is paid equally by the central and the state governments.

Fishers registered with their respective cooperative societies only are eligible for saving cum relief scheme. The scheme offers benefits to the fishermen during the lean period (this again varies from one state to another depending upon the climatic conditions). Under this scheme, the fishermen must save Rs 1500 for nine months in their bank account. The government will add further Rs.3000 and give Rs.4500 to the beneficiary for the lean period and interest incurred on his savings. Since the scheme's implementation in 2016-17, 2406 fishermen have received assistance.

Institutional and Capacity Building: Strengthening of Cooperative Societies

The government is also engaged in institutional and capacity building activities like strengthening cooperative societies to develop inland fisheries. The fishermen and women have been organised into different fisheries cooperative organisations such as Fishermen Cooperative Societies (FCS), Fisherwomen Cooperative Societies (FWCS), Fishermen Marketing Cooperative Societies (FMCS), District Fishermen Cooperative Societies

(DFCS) and Fishing Licence Holders Primary Marketing Cooperative Societies. At present, 4305 cooperative societies are functioning with 304020 registered members. The Societies have a 3-tier structure with primary fishermen cooperative societies at the village level, District fishermen cooperative societies at the district level and Federation at the State level.

The state government has initiated and organised Fisherwomen into Matsya Mitra Groups (MMGs). At present, there are 364 fisherwomen cooperative societies with 23,032 members and 1511 MMGs active in State. Each MMGs under Chief Minister (CM) package and Rashtriya Krishi Vikas Yojana (RKVY) will receive a revolving micro-credit of Rs.25,000. It aims to protect the fisherwomen from being exploited by middlemen during post-harvest activities.

The societies are given tanks/water bodies on lease on a nominal lease rent, and the government provides fish seeds under different schemes. Government also gives training to the stakeholders. For example, 500 fishermen have been trained on reservoir management through Krishi Vigyan Kendras, FISHCOPPED and Fisheries Research Station and exposure visits are organised to help them understand best practices like pen culture and cage culture.

The Telangana State Fishermen Cooperative Societies Federation (TSFCOF) Ltd Hyderabad is an apex Federation under the state government. TSFCOF also operates six fish retail outlets in Hyderabad besides running a mobile fish sale in 4 zones of Hyderabad and fish canteen, which aims to supply fresh fish in hygienic condition to consumers the twin city.

Other Supporting Measures for Fisheries Development

The Integrated Fisheries Development Scheme (IFDS) is a flagship programme of the Government of Telangana that was launched in September 2018 benefitting 2.5 lakh fishers. Under this scheme, mopeds were given

to the registered members of the society at a subsidised price. Till now in state 57660 moped vending units were distributed. There are 2949 vending units with luggage auto, 841 mobile fish outlets, 111 hygienic transport vehicles, 8 insulated trucks, and 1343 portable fish vending kiosks. Further approvals have been made to construct 15 ice plants, five fish feed mills, 15 ornamental fish units, 14 Re-circulatory Aquaculture system (RAS), one fish processing unit, two Net mending and Putty Fabrication units, seven Aqua tourism units and 249 fish food kiosks. Another novel scheme of providing Mobile Fish Retail Outlets to unemployed women in each ward in Greater Hyderabad Municipal Corporation is also under implementation.

Other measures to strengthen fisheries include constructing community halls, fish market yards and wholesale market complex etc. With assistance from the National Fisheries Development Board, five wholesale markets, one at Karimnagar and other four in Hyderabad (Begumbazar, Kukatpally, Mallaramand Chilkalguda) were sanctioned by the State. Out of 578 approved community halls, 268 halls have been completed while the rest are under progress. Similarly, out of the 84 sanctioned fish markets, 29 are finished, and the remaining in progress.

14.3 The Way Forward

For a landlocked state like Telangana, sustainable development goals provide an opportunity to augment inland fisheries' visibility as a means of economic growth and protection of inland freshwater ecosystems. Overlooking the role and contributions of inland fisheries may pose a severe challenge in achieving sustainable

development goals. The creation of additional water bodies under various irrigation schemes and the rejuvenation of existing water bodies under the Mission Kakatiya project has provided ample opportunities for the State to develop inland fisheries. As the government envisions to increase fish production and productivity, it has to offer and then strengthen both backward and forward linkages. It needs to ensure timely availability of good quality seeds to the farmers and impart training to them on their rearing and harvesting activities. The Fish seed stocking programme and scaling up of hatchery-reared Scampi juveniles in reservoirs on 100 per cent grant has given positive results. Promotion of cage culture in reservoirs, construction of fish brood bank in Nizamabad, Construction of Re-circulatory aquaculture systems and fish seed hatcheries and construction of new fishponds and markets are expected to boost inland fisheries growth.

India's annual per capita consumption of fish and fish products is about 5 kgs as against 9-10 kgs worldwide. While Telangana is among the top consumers of non-vegetarian food in the country, fish consumption is not high. Ensuring fish availability to the consumers at an affordable price and in hygienic conditions by improving the marketing infrastructure is critical. Wholesale and retail marketing infrastructure and cold storage and transport facilities need to be enhanced. Implementation of welfare programmes for fishers sponsored by both State and Central governments is also equally important. The flagship programme "Integrated Fisheries Development Scheme" launched by the State government in September 2018 which has benefitted over 2.5 lakh fishers, is proving to be a significant step.

Sustainable Development Goal - 15

Life on Land



Vision of Telangana and Linkage with SDG 15

Telangana, the youngest State in the Union of India envisages comprehensive, inclusive, and holistic development of its people, while achieving the State's vision: 'Bangaru Telangana (Golden Telangana)'. Telangana believes that economic growth is one of the key underpinnings of societal development and provides the means to sustainably improve the lives of millions of people through programmes targeting social welfare and inclusive growth. It entails sustained efforts for improving infrastructure in both rural and urban areas and providing the facilities that create overall, holistic development of all communities in the society. Human resource development through universal education and skill development, provision of accessible, affordable healthcare services and gainful employment and livelihood opportunities for all people in an environment where the rule of law and social justice prevails, is also an important part of Telangana's vision for 2030. This is in line with the SDGs. The vision of Telangana State with respect to SDG-15 is Conservation, Development and Sustainable management of forests and wildlife in the state to attain ecological balance and human well being and extend ecosystem services to meet the social, economic, and environmental needs of the present and future generations.

Achievements

The reserved, protected, and unclassed forests are 75.65 per cent, 22.07 per cent and 2.28 per cent of the recorded forest area in the State respectively

- The percapita forest area is 0.082 Ha as against all India average of 0.240 Ha.

- The State of Telangana is endowed with rich diversity of Flora and Fauna with over 2939 plant species, 365 bird species, 103 mammal species, 28 reptile species and 21 amphibian species in addition to large number of Invertebrate species
- Telangana Ku Harita Haram' aims at achieving the twin objectives of increasing the forest cover and reduce pressure on the existing forest resources, through massive community participation by Vana Samrakshana Samithis (VSS) and Eco-Development Committees (EDCs) in protected areas and Watershed Development Committees in the watershed areas
- Starting from the year 2017 July, the geotagged "Drone Swarms" dropped one lakh "seed balls" per day making it the fastest way of sowing seeds for forest regeneration
- Amrabad Tiger Reserve spreads over 2,800 sq.kms in the districts of Mahbubnagar and Nalgonda, is the largest tiger reserve in the country
- Mission Kakatiya is aimed at improving the ground water table, reducing the power consumption by farm sector, getting higher yields, spurring the growth of livestock, fisheries, improvement of green cover and rejuvenating rural economy

Challenges

Effective community participation raising required funds for implementation of Programmes, pressure on fringe forests for cattle grazing and other livelihood support schemes of local Government may be detrimental to forests. Natural calamities

such as floods and wild forest fires rarely are not in the prediction range and can cause loss to forests and its health. Developmental activities such as roads/rail through forests etc are fragmenting forests and danger to WL but a balance needs to be maintained.

15.1 The Context

Equitable Distribution of Fruits of Development

The world is in the fifth year of the era of Sustainable Development Goals (SDGs). The SDGs which came into effect from 1st January 2016, have 2030 as their deadline to achieve the targets. The progress of the world to meet the SDGs, largely depends on India's progress. India played a prominent role in the formulation of SDGs and much of the country's National Development Agenda is mirrored in the SDGs. The present SDG index for India is 57. With 17 Goals, 169 targets and 306 national indicators the SDGs might be difficult to understand.

The spectrum of the 17 SDGs and 169 targets range from poverty eradication, human health, and sanitation to urban settlements and to safeguarding the global ecosystems on which humanity depends for its survival. SDGs for 2030 were evolved from Millennium Development Goals (MDGs) of 2015. At the global level, 8 Millennium Development Goals with 21 targets were formed to speed up efforts to address the most important needs of the world's poor and marginalized communities by 2015. Despite rapid economic growth in several countries, the benefits of growth were not equally distributed and the side effects of growth such as environmental degradation were not accounted properly. As a result, in 2015, SDGs came into being to address these challenges with a more universal, comprehensive, and inclusive nature of goals compared with MDGs.

Global Scenario

Human life depends on the earth as much as the ocean for our sustenance and livelihoods. Plant life provides 80 percent of the human diet, and we rely

on agriculture as an important economic resource. Forests cover 30 percent of the Earth's surface, provide vital habitats for millions of species, and important sources for clean air and water, as well as being crucial for combating climate change. Around 1.6 billion people depend on forests for their livelihoods. Forests are home to more than 80 percent of all terrestrial species of animals, plants, and insects. 2.6 billion people depend directly on agriculture for a living. Nature-based climate solutions can contribute about a third of CO₂ reductions by 2030. The value of ecosystems to human livelihoods and well-being is \$US125 trillion per year. Mountain regions provide 60-80 percent of the Earth's fresh water.

Globally, every year, 13 million hectares of forests are lost, while the persistent degradation of drylands has led to the desertification of 3.6 billion hectares, disproportionately affecting poor communities. While 15 percent of land is protected, biodiversity is still at risk. Nearly 7,000 species of animals and plants have been illegally traded. Wildlife trafficking not only erodes biodiversity, but creates insecurity, fuels conflict, and feeds corruption. Urgent action must be taken to reduce the loss of natural habitats and biodiversity which are part of our common heritage and support global food and water security, climate change mitigation and adaptation, and peace and security.

India Scenario

Land that provides habitat to more than 80 percent of all terrestrial species of animals, plants, and insects, is an essential and irreplaceable resource of the world. However, unsustainable developmental activities like deforestation and desertification pose a threat to the ecosystem and affect the lives of millions of people. India's forest cover is presently 21 percent and secured territories make up almost 5 percent of the nation's aggregate land area. India aims to integrate ecosystem and biodiversity values into local planning, development processes and poverty reduction strategies. India's progress on this Goal is important globally, since the country is home to 8 percent of the world's biodiversity,

including numerous species that are unique to the country. India's global leadership on biodiversity is reflected in the pivotal role it played in facilitating the implementation of the Nagoya protocol- one of the global Aichi Biodiversity Targets. The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of benefits arising from their utilizations, translates and gives practical effect to the equity provisions of the convention on biological diversity.

To measure India's performance towards SDG 15 on Life on Land, four national level indicators have been identified, which capture three out of the twelve SDG targets for 2030. The four indicators are -(i) Percentage of total land area covered under Forest; (ii) Decadal Change in the extent of Water Bodies within Forest; (iii) Change in Forest Area; and (iv) Population of Wild Elephants. Based on these four national indicators, the SDG Index Score on Goal 15 for India stands at 90, and the score ranges between 43 and 100 for States and between 50 and 100 for UTs. The Achievers (with an Index score equal to 100) are Assam, Chhattisgarh, Goa, Manipur, Odisha and Uttarakhand among the States, and Dadra and Nagar Haveli, and Lakshadweep among the UTs. The Government of India has taken various initiatives towards meeting the targets set under SDG 15: the National Environment Policy, 2006 and National Agro-forestry Policy, 2014, the Green Highways Policy, 2015, the National Afforestation Programme, the Integrated Development of Wildlife Habitats Programme, the Programme on Conservation of Natural resources, and Eco-systems, etc.

Telangana is in the category of front runner in India with respect to achieving the SDG goal 15 with a score of 83 in 2019-20. However, it is performing slightly lower, as compared to all India level whose score is 90. Government of Telangana is formulating strategies and a state action plan to achieve the goal of forest and biodiversity

conservation. This also includes wildlife protection and natural resources conservation. Major state government initiatives taken up to address SDG goal 15 are 1. Haritha Haram (Afforestation); 2. Soil and water analysis and appropriate nutrition and cropping; 3. Mission Kakatiya; and 4. Development of National Parks and Sanctuaries.

In order to ensure widespread knowledge about the SDG Agenda 2030 with respect to goal 15, the Telangana state undertook various initiatives such as (a) briefing on SDGs in the Secretaries Conference chaired by Chief Secretary, (b) orientation of all the district level officers on SDGs with special focus on Goal 15, (c) training of district officials with focus on the goal and (d) creation of e-learning modules both in the local language, Telugu, and English. Collaboration with UN agencies such as UNDP has helped in strategy development. The Planning Department is the nodal agency for overseeing the implementation of the SDGs in the State. Lead departments for implementing SDG: 15 Life on Land are Environment, Forest, Science and Technology. All line Departments are made responsible for implementing the programmes as mapped with the SDG. Mapping of SDG 15 with department, and flagship programmes has been done. Draft State indicator framework has been developed and distributed to concerned Departments for their interdepartmental convergence and coordination. Thematic Groups have been identified to plan, implement and monitor performance of the implementation of SDGs.

Telangana state is having diverse forest types owing to its diverse bio-climatic conditions and its geographic location is home for rich flora and fauna. As per the recent Forest Survey of India (FSI, 2019), the state is having 24.1% of total geographical area under forest cover with a total growing stock of 119.57 million Cu.M./ha.

Table 15.1 SDG GOAL 15 Indicators for Telangana State and Proposed Targets to Achieve the Goal by 2030

SDG Global Target	Indias National Indicator Selected (NIF)	National Target Value for 2030	State Indicator (SIF)	State Target Value for 2020	State Target Value for 2022	State Target Value for 2025	State Target Value for 2030
15.1 By 2030 Ensure the conservation, restoration, and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains, and drylands, in line with obligations under international agreements	15.1 Forest Cover as a percentage of total geographical area Percentage of total land area covered under forest	33	Percentage of total land area covered under forest	24.1	-	-	33
15.2 By 2030 promote the implementation of sustainable management of all types of forests and substantially increase afforestation and reforestation globally.	15.2 Total area covered under different afforestation schemes.	-	Total area covered under different afforestation schemes including Rejuvenation	21969 ha	23068 ha	24716 ha	27463 ha
	15.2.3 Total tree cover achieved outside forest area (number of seedlings planted (in Lakhs)	-	Total tree cover achieved outside forest rea (number of seedlings planted-Both rural and urban areas (in Lakhs)	19,448,000	87,418,500	218,549,500	437,099,000
	15.2.4 Number of Nagar-vans and school Nurseries created (annual number of visitors in the forest parks)	-	Nagar Vans Created (annual number of visitors in the park)	3.00 Lakhs	6.00 Lakhs	12.0 lakhs	30.0Lakhs

SDG Global Target	Indias National Indicator Selected (NIF)	National Target Value for 2030	State Indicator (SIF)	State Target Value for 2020	State Target Value for 2022	State Target Value for 2025	State Target Value for 2030
15.3 combat desertification, restore degraded land and soil, including land affected by desertification, drought, and floods, and strive to achieve a land degradation-neutral world	15.3.1 Percentage of degraded area restored- SMC works in CMT	-	area restored/ Degraded Forest	132260	171938	198390	529040
	15.3.2 Increase in forest cover in the degraded forest area (ha).	-	Increase in forest cover in the degraded forest area (ha).	117	829	2073	4147
	15.4.2 Restoration of Water bodies / streams in mountain areas	-	Percentage of water bodies in the forest area	1.05	1.3	1.5	2.0
	15.4.3 Conservation of local wild species (Nos)	-	Conservation of local wild species (Nos)	140	250	400	500
15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wild life products	15.7.1 Percentage reduction in traded wildlife that was poached or illicitly trafficked.	-	Number of cases registered under Wild life Protection Act	603	853	1228	1728
15.8 introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species	15.8.1 Area/Percentage Change in prevention & control of invasive alien species	-	Area in Ha of prevention and control of invasive and alien species	5947	25000	50000	76100

Source: Telangana State Forest Department

The forests of the Telangana State are distributed in different agro-climatic zones with varying composition and forest types. Majority of which are classified as (1) Tropical Dry Deciduous (2) Southern Tropical Moist Deciduous and (3) Southern Tropical Thorn forests. The reserved, protected, and unclassed forests are 75.65 per cent, 22.07 per cent and 2.28 per cent of the recorded forest area in the State respectively. Main reasons for the increase in forest cover in the State are plantation and conservation activities. The percapita forest area is 0.082 Ha as against all India average of 0.240 Ha. The State of Telangana is endowed with rich diversity of Flora and Fauna with over 2939 plant species, 365 bird species, 103 mammal species, 28 reptile species and 21 amphibian species in addition to large number of Invertebrate species.

Important endangered species found in the State are Tiger, Leopard, Indian Gaur, Four Horned Antelope, Black Buck, Marsh Crocodile etc. The State is also bestowed with dense Teak Forest along the banks of river Godavari right from Nizamabad through Adilabad, Karimnagar, Warangal up to Khammam district. These forests are home for several deciduous species like Nallamaddi, Yegisa, Rose wood, Narepa, Bamboo in addition to Teak. The tangible benefits derived from Forests like Timber, Bamboo, Fuel wood, Fodder, Non-Timber Forest Products etc., are quantifiable. Intangible benefits like maintenance of ecological balance, Bio-diversity conservation, conservation of soil and moisture, regulating the water flow, Green House Gas mitigation, sequestering carbon-dioxide from the atmosphere etc., are not quantified but are of great significance. The intangible benefits are not considered while computing the national income accounts and hence the real contribution of the forestry sector is grossly underestimated.

As per State Forest Policy, Vision 2020, Forest Department implements various development schemes to protect and develop existing forests, to improve its productivity and economic value. The

main objectives of programmes are Community Forest Management, National Afforestation Programme (NAP) (Centrally Sponsored), RIDF Projects, Soil & Moisture Conservation, Social Forestry, Wildlife Management and Human Resource Development are enriching existing low-density forests. Forest department has set a programme under RIDF, CAMPA, 13th FC grants and other schemes executed various types of water harvesting structures such as Check dams, Contour Trenches, Rocks fill dams, Percolation tanks etc in forest areas. These structures help in recharging of ground water, which in turn improve forest vegetation besides stabilizing the status of agriculture in adjoining fields. The component of research for improvement of natural forests has assumed great significance. Keeping in view of recent trends, the department has laid special emphasis on Forest Research to conduct experiments, improve nursery and plantation techniques, vegetative propagation, seed production and various silvicultural practices. Monitoring of vegetation (Forest) Canopy cover density, Forest fire risk zonation mapping, mapping all forest areas with site suitability, re-locating & demarcating forest boundaries and Inventory of forest resources are some of the major and important activities taken up by the department using latest information technology includes GIS. Almost all programmes/schemes of the Forest Department are being implemented through participation of local people, Vana Samrakshna Samithis (VSS) and Eco-Development Committees (EDCs) in Protected Areas and Watershed Development Committees in the Watershed areas. Most of the forest area was highly degraded owing to biotic pressure and overuse of forest resources. Since last one decade most of the degraded areas have been clubbed again with the implementation of Community Forest Management programme. The State has a varied topography ranging from the hill ranges of Eastern Ghats and Nallamala to Deccan Plateau, River Valleys of Godavari and Krishna and supports a rich variety of Biodiversity and a wide variety of Floral and Faunal forms.

15.2 SDG-15 Targets and Indicators

The State of Telangana is aiming to achieving the SDG goal 15 by the year 2030 by working on various indicators (see table 1). Most important among them include i) the conservation, restoration and sustainable use of terrestrial and inland fresh water ecosystem and the services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements ii) Promote the implementation of sustainable management of all types of forests iii) Combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve land degradation neutral world iv) Ensure the conservation of mountain ecosystems, including their biodiversity, in order to protect and prevent the extinction of threatened species and promote appropriate access to such resources, as internationally agreed. Address both demand and supply of illegal wildlife products invasive alien species on land and water ecosystems and control or eradicate the priority species. V) Integrate ecosystem and biodiversity values into national and local planning, development process, poverty reduction strategies. Provide adequate incentives to advance such management, including for conservation and reforestation by increasing the capacity of local communities to pursue sustainable livelihood opportunities.

Telangana has taken up many important initiatives towards achieving the SDG goal 15, which are as follows:

Haritha Haram

‘Telangana Ku Haritha Haram’ aims at achieving the twin objectives of increasing the forest cover and reduce pressure on the existing forest resources, through massive community participation by Vana Samrakshana Samithis (VSS) and Eco-Development Committees (EDCs) in protected areas and Watershed Development Committees in the watershed areas. This flagship programme (started on July 5th, 2015) of the State envisages to increase the present 24% tree cover in the State to 33% of the total geographical area so as to reduce

the effect of global warming and to maintain environmental stability and ecological balance. This is to be achieved through increased tree coverage both in notified areas and outside of these zones. The first objective is to rejuvenate degraded forests by a multi-pronged approach. Strategies are Social Forestry / Urban forestry. 230 crore seedlings are proposed to be planted in the state. Out of this, 130 crores seedlings are proposed to be planted outside the notified forest areas. 100 Crores within Forest areas (20.00 Crs through plantations and 80.00 Crs through rejuvenation). The second week of July every year marks a major milestone for the initiative as the planting drive is relaunched on an extensive scale in entire Telangana. The programme continues to witness active participation of the people from all walks of life, including government agencies, officials, citizens, and public representatives.

Telangana ku Haritha Haram is an attempt to transform Telangana into a beautiful, healthy, and highly habitable state. The large plantation programme started with the aim of planting around 40 lakh saplings in each Assembly constituency and about 40,000 saplings in every village, every year. The main objectives of this project include protecting, afforestation and rejuvenating degraded forests and treatment of RoFR (Recognition of Forest Rights) areas. Conservation of areas rich in biodiversity outside the Protected Area Network is encouraged with the active collaboration of all stakeholders subsuming the Biodiversity Management Committees. Cutting-edge technological interventions like improved planting stock, GIS (geographic information system), MIS (management information system), remote sensing, tagging of each plant and DGPS (differential geographic positioning system) are being used extensively to make forest management in the state, a role model for the nation.

In non-forest areas, various approaches like avenue plantation, barren hill afforestation, institutional plantations, agro-forestry, tank foreshore, canal bank, riverbanks and rivulets, green panchayats, Smrithi Vanams and planting in urban residential

colonies, schools, parks, playgrounds were taken up in earlier rounds of the programme.

Field Activities: Field functionaries of various government line departments have undertaken identification of sites and prepared village-level action plans. At the State-level, two committees have been set up to monitor the progress – State-level Coordination and Monitoring Committee and State-level Steering Committee, headed by the Chief Secretary.

A detailed exercise for identification of nurseries and sites available for raising plantations have been undertaken under the 'Mana Vooru-Mana Pranalika', initiative. An estimated 3,699 nurseries (during 2014-15) have been identified to raise adequate stock of plantations by various agencies, including Forest Department, District Water Management Agency, Agriculture and Horticulture and Tribal Welfare departments, for achieving the target. The task also involves procurement of polythene bags and seeds for grounding the nurseries.

Funds for maintenance, watering and protection of the nurseries are met from the State Budget and are also drawn from MGNREGA and Compensatory Afforestation Fund Management and Planning Authority (CAMPA). To reach every section, publicity campaigns have been launched via print, electronic and audio-visual media besides hoisting a dedicated website called harithaharam.telangana.gov.in and reaching the people on Facebook and Twitter. An online monitoring system to supervise the progress has also been developed.

A Green Panchayat, Haritha Rakshana Committee, headed by the village sarpanch, including MPTC, Panchayat Secretary, SHG leader, ANM (auxiliary nurse midwife) and an anganwadi worker as members, has been constituted in each panchayat. The committee, besides guiding the implementation of the programme, is mandated to ensure protection of plantations and involve people through motivation by way of TV ads, radio jingles, campaigns, posters, pamphlets, and stickers for vehicles.

Meetings with all the Union and State government Institutions, Army officers and Cantonment boards were conducted to enlist their support and participation. The mass plantation drive 'Haritha Hyderabad' has set a record with the plantation of 25 lakh saplings in the state capital.

This year (2020), the government is aiming to plant fruits, flower, shade-giving and medicinal trees. It has also announced a '60-day action plan' to promote greenery and hygiene across the State. In addition to the existing species being planted under the haritha haram, more priority should be given to species like Peepal, Banyan, Tamarind, and traditional Mango varieties.

The new Panchayati Raj Act of the State enacted in 2018 clearly demarcates the duties, powers, and responsibilities of gram panchayats as well as guarantees funds for them. Hence, this is a good opportunity for the newly elected sarpanches, deputy sarpanches and ward members to perform their duties effectively for the development and progress of their villages. As per the new Panchayat Raj act 2018, One of the duties of Sarpanch is to take up plantation and maintain green cover in the village. One of the functions of the panchayat secretary is to take up plantation in and around the village and ensure that 80 percent of the plants survive. Separate standing committees have been setup for plantation and green cover improvement.

The program, which has already completed six years, has entered its seventh consecutive year. Good rainfall in 2020 year has resulted in better implementation of the sixth phase of Haritha Haram. Until August, the State government had planted 20.01 crore or 70 percent of its targeted 29.98 crore saplings. Districts of Kamareddy, Medchal, Warangal (Rural), and Kothagudem have achieved their 100 percent target and have even exceeded plantation drives. But drives in Nalgonda, Warangal Urban, HMDA, and GHMC areas remained sluggish, as all these districts have not yet achieved 50 percent of their stipulated target, due to heavy rains and later due to outspread of COVID-19.

The results of the planting of the last five phases, the will of the government and the cooperation of all sections of the society are now visible. Greenery is growing at a remarkable rate throughout the state. Streets, villages along all the roads (Avenue Plantation) grown are attracting vegetation. The villagers too are pitching in. A recent nationwide report released by the Forest Survey of India in 2019 makes it clear that Telangana is one of the states where greenery is growing significantly. Telangana is also at the forefront of alternative forestry and natural forest restoration schemes with the benefit of CAMPA funds.

Seed Bombing: In a most novel and advanced initiative for enhancement of tree cover in the state of Telangana, the forest department has embarked

on Drone and Artificial Intelligence (AI) driven forest restoration. Starting from the year 2017 July, the geotagged “Drone Swarms” dropped one lakh “seed balls” per day making it the fastest way of sowing seeds for forest regeneration. The seed ball is made of clay, manure, water and a seed in the middle and they are dried up before throwing on barren lands and hillocks just before the monsoon. Once it starts raining, the balls open and seed starts germinating. Seed balls were dropped 2017 from helicopters on open forest land and hill areas to improve green cover. This seed bombing has also helped the state to achieve the Haritha Haram target. Seed balls are created by local communities dependent on the forest area are being dropped by the Drones there by making seed sowing faster and more reliable in difficult terrains.



Palle Prakruthi Vanam

GP: Mallannapalem; Mandal: Mudhigonda; District: Khammam

Palle Prakruthi Vanam: Telangana government will create Palle Prakruthi Vanams (forest-cum-park) in each of the 12,000-plus Gram Panchayats across Telangana. The district administration was asked to identify half acre to one acre land close to villages to create Palle Prakruthi Vanam which will act as a lung space for the village. It will be developed into a recreation spot for children and adults. In the prakruthi vanams, plantation of 4,000 saplings is being taken up in an area of one acre land. Some of these Palle Prakruthi Vanams will have 32 to 48 varieties of saplings which include fruit bearing plants.

Miyawaki Method of Afforestation: Telangana government has introduced the Japanese Miyawaki method of afforestation to grow urban forests and expand the green cover from 24% to 33%. Miyawaki is a Japanese technique introduced by **Japanese botanist Akira Miyawaki**, that helps build dense, native forests in a short time. Miyawaki method helps to create a forest in just 20 to 30 years, while through conventional methods takes anywhere between 200 to 300 years. It has revolutionized the concept of urban afforestation by turning backyards into mini-forests. This method includes planting trees, only native species, as close as possible in the same area. The approach ensures that plant growth is **10 times faster and the resulting plantation is 30 times denser** than usual.

Other Schemes to Improve Forest Green Cover
National Afforestation Programme: Government of India has formulated National Afforestation Programme by merging all the IX Plan Centrally Sponsored Afforestation Schemes implemented during IX Five-year Plan. The scheme is 100% Centrally Sponsored and being implemented through the Forest Development Agency at State level and division level and at village level through Forest Protection Committees or Vana Samarakshana Samithies. As per the approval accorded by Government of India, the forest areas

are being treated under the following treatment streams with the involvement of Vana Samrakshana Samithies. Aided Natural Regeneration, Artificial Regeneration, Pasture Development, Mixed Plantation and with NTFP value and Medicinal plants (1100 Plants/Ha) and Bamboo Plantations

The financial resources given by the 13th and 14th Finance Commission were utilized for forest protection, wildlife conservation, development of social forestry, involvement of local communities through forest development agency, research, training, to improve the information technology and communication and for the preparation and revisiting of working plan.

In addition to funding from government of India schemes, Telangana has been allocating substantial amounts of funds for carrying out various initiatives. These include

Development of National Parks & Sanctuaries:

There are twelve Protected Areas i.e., (3) **National Parks** & (9) **Wildlife Sanctuaries** in the State to promote rich biodiversity (See Table 15.2). Amrabad Tiger Reserve spreads over 2,800 sq.kms in the districts of Mahabubnagar and Nalgonda, is the *largest tiger reserve* in the country. In addition, we have (2) **Zoological Parks** and (8) **Deer Parks** in the State for conservation of wildlife. The objective of the Scheme is to take up the habitat improvement works in wildlife sanctuaries including National Parks and Project Tiger Reserve, besides taking up of Wildlife education programme. The Major activities taken up for development and conservation of wildlife in the National Parks & the Wildlife Sanctuaries of the State are Improvement of Habitat, Development of communication network Strengthening protection measures, Fire protection measures, Infrastructure, Wildlife Education & Extension, Wildlife health, Wildlife Census, Surveys & Monitoring and Eco-development.

Table 15.2 List of Wildlife Sanctuaries and National parks in Telangana state

Sl.No	Wild Life Sanctuaries (WLS)	District/Location
1.	Pakhal Lake And Wildlife Sanctuary	Warangal
2.	Eturunagaram WLS	Warangal
3.	Pocharam Wildlife Sanctuary	Medak
4.	Kinnerasani WLS	Khammam
5.	Kawal Tiger Reserve	Adilabad
6.	Pranahitha wildlife sanctuary	Adilabad
7.	Lanja Madugu Siwaram WLS	Peddapalli
8.	Manjeera Crocodile WLS	SangaReddy
9.	Amrabad Tiger WLS	Mahbubnagar and Nalgonda
	National parks	
10.	Mrugavani national park	Hyderabad
11.	KBR national park	Hyderabad
12.	Mahavir Harina vanasthali national park	Hyderabad

Source : Dept. of Forest, Govt. of Telangana

Integrated Forest Protection (Intensification of Forest Management): Under Integrated Forest Protection Scheme (75:25), the funds are provided by the Government of India (Central Share) as well as State Government (Matching State Share) for implementation of the scheme. Under the scheme, it has been contemplated to protect the forest areas in the state from the Fire Hazards by way of providing required infrastructure and taking fire control measures. The main components of the scheme are Forest Fire Control and Management (existing), Strengthening of Infrastructure (existing), Survey Demarcation and Working Plan preparation (existing), Protection and Conservation of Sacred Groves (New), Control and Eradication of Forest Invasive Species (New) and Preparedness for Meeting Forests (New). Creation and Maintenance of Fire lines, Survey & Demarcation of boundaries, Engaging Fire Watches, Procurement of Fire-fighting equipments, Purchase of vehicles for providing mobility to the staff, creating infrastructure like maintenance of roads, construction of staff quarters and strengthening the wireless network are the main activities of the scheme.

Strengthening and Upgradation of Forest Department: The aim of the scheme is

maintenance of research works, publicity, raising nurseries / plantations and protection.

a. Regional Offices / Silvicultural Research: The Scheme of Silvicultural Research under Regional Offices is being implemented year after year as a State Plan Scheme. **Silviculture** is the practice of controlling the growth, composition/structure, and quality of forests to meet values and needs, specifically timber production. There is a need to develop suitable species-specific areas and introduce high yielding varieties. Silvicultural Research has assumed a greater significance for the improvement of the natural forests particularly in afforestation of the large tracts of degraded forests lands duly involving the VSS under the Community Forest Management Programme. Keeping the above in view, the scheme is proposed to be implemented to continue and to conduct the experiments and standardize the improved nursery techniques, vegetative propagation, natural forest management etc.

The following experiments on nurseries are proposed to be continued to find the results. 1. Culling at nursery stage 2. Application of Bio-Pesticides & Bio-Fertilizers 3. Hardening of seedlings. It helped in conducting trials on improved nursery

technology, standardization of potting medium, development, and maintenance of demonstration plots etc., on variety of indigenous timber species.

b. Strengthening and Up-gradation of Forest Department (Publicity): The main objective of this scheme is to cause wide publicity of the Forest Department activities highlighting the achievements and create awareness on Conservation of Forests, Biodiversity, and wildlife among the people. The Forest Utilization Officer is implementing the scheme which includes component for giving wide publicity to encourage more effective and intensive utilization of forest products in trade and industries and make publicity by organizing display skills in All India Industrial Exhibition, Hyderabad every year to enlighten the public about the developmental activities taken up by the Forest Department, awareness sessions in schools and also to bring awareness regarding effective utilization of forest resources. Preparation of Forest Department Tableaux during National functions i.e., 26th January and 15th August, publishing Annual Administration Reports, Facts and Figures and Forest at a Glance of the Department and brochures are also undertaken under the scheme. Advertisements are also released to Newspapers highlighting the achievements. A Statistical Cell is established in FUO Office to study the trends in the market for Timber and other forest produce and work in collaboration with Territorial Divisional Forest Officers to secure the best price to the forest produce sold by them by constant interaction in furnishing data on market trends on various forest products.

c. Forest Protection Scheme: The Government has laid much emphasis on the protection of forests. The Forest Department has a separate Vigilance Wing at Headquarters headed by a Addl. Prl. Chief Conservator of Forests (Vig.), who in turn is assisted by Chief Conservator of Forests, Divisional Forest Officers and (1) Vigilance Party. Besides this, (7) Flying Squad Parties and Mobile Parties are functioning at the field level for effective protection of vulnerable forest areas.

The Vigilance cell along with the Flying Squad Parties also inquired into the allegations, takes up inspections and conducts surprise checks for detection of illicit forest produce in storage and patrols the vulnerable routes to check the smuggling of the forest produce.

The other schemes which lead to achieving SDG 15 in Telangana include mixed plantation (social forestry); Seed development; Environmental Planting in degraded lands around urban area; Zoological Parks; Sanctuaries; and Sanctuaries and Forestry School, Yellandu.

Under the Non-Plan activities, the department is taking up activities such as Extraction of Timber (DET). Social Forestry, Forest Protection, Research Development, Working Plan and District Offices also. The Departmental Extraction of Timber, Fuel and Pulp Wood, Faggot Wood, Long Bamboo and Bamboo Industrial Cuts (BIC) from natural forests as well as Plantations. At present, there is a moratorium on extraction of timber from natural forests except for bamboo from the overlapping bamboo forests. The major activity comprises harvesting timber and poles from matured plantations of Teak, Eucalyptus, Casuarinas etc. and long bamboos and BIC from the bamboo coupes as per the prescriptions of working plan of the respective Divisions. To implement this scheme the State Government makes budget provision and fixes the physical and financial targets every year.

The Forest Development Corporation Limited, Hyderabad has been appointed as an agent to the Government. 8. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) was introduced in the state in the year 2009-10 to promote, afforestation and regeneration activity as a way of compensating for forest land diverted for non-Forest purposes and to improve the forest cover in the state beside strengthening the frontline the field forest staff for protecting the forest.

The following are the aims and objectives of the State CAMPA. a. Conservation, Protection, Regeneration and Management of existing

natural forests. b. Conservation, Protection and Management of wildlife and its habitat within and outside protected areas including the consolidation of the protected areas. c. Compensatory Afforestation. d. Environment Services The funds shall be released in favour of the State CAMPA directly from the Government of India. 9. MGNREGS: Under, Mahatma Gandhi National Rural Employment Guarantee Scheme the department is taking up forestry operations in the Reserved Forest Areas and outside. Raising of Plantations, Soil & Moisture Conservation works, and Habitat Improvement works are being taken up in the Vana Samrakshana Samithies areas and Forest areas. Raising of Nurseries and Plantations in farmers lands, Public Institutions and Community lands and raising of Avenue Plantations, etc., are being taken up by the Social Forestry wing outside the Reserved Forest Areas.

Mission Kakatiya

Another major initiative to achieve the target of SDG goal 15 is Mission Kakatiya which aimed at rejuvenating age-old tanks. This flagship programme aimed at restoring around 46,000 tanks over a period of five years to provide irrigation source to about 25 lakh acres spending Rs 22,000 crore. Restoration work has been started in nearly 20,000 tanks and works have been completed for about 5,000 tanks. Mission Kakatiya is aimed at improving the ground water table, reducing the power consumption by farm sector, getting higher yields, spurring the growth of livestock, fisheries, improvement of green cover and rejuvenating rural economy.

- Advantages of Silt removal& Silt Application
- The water retention capacity of the soil will increase thereby decreasing the number of wettings.
- De-silting will improve ground water recharging capacity and increase the capacity of the tank there by increasing the availability of water even during the summer for irrigation & drinking water purposes.

- As per studies conducted, it is observed that due to de-silting the fluoride content in the ground water will be reduced considerably.
- Silt can be used as nutrient / fertilizer to the agricultural farms which generally reduces the usage of fertilizer.
- The yield of the crops like cotton and chilies has increased by 20 to 30%.
- Soil and Water analysis for appropriate nutrition and cropping

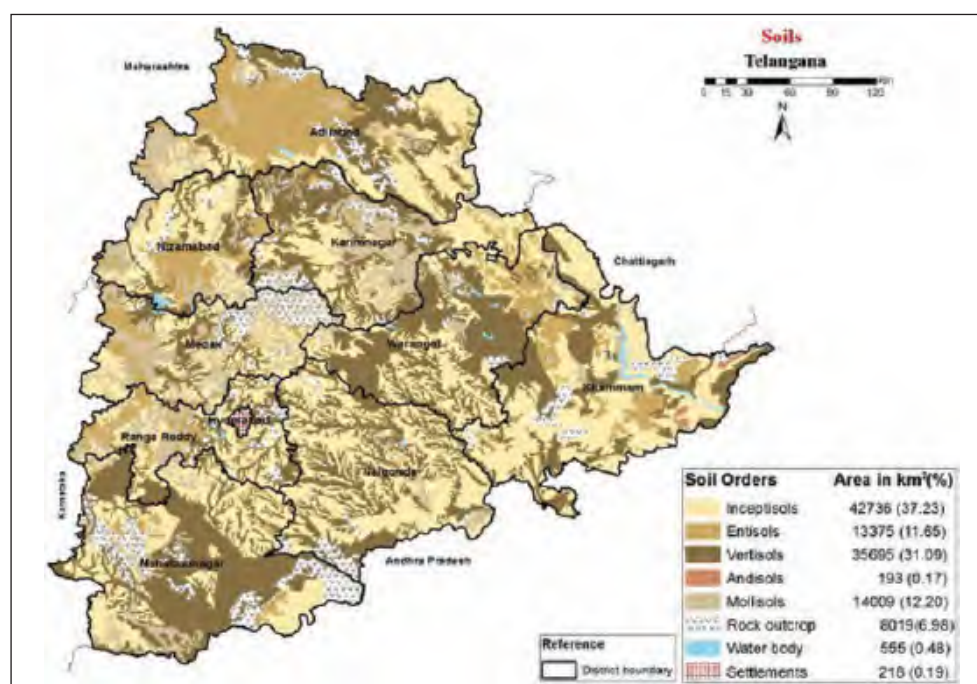
Soil is the Basic Source for the Progress and Development of Agriculture.

Telangana state is a veritable museum of soils ranging from fertile alluvial soils to very poor sandy soils.

The state is blessed with productive soils without much drainage problems. Major soil groups present in the state are i) red soils, ii) black soils, iii) alluvial soils iv) lateritic soils v) problem soils including saline and saline-alkali soils and non-saline-alkali soils. Red soils are predominant in Telangana state accounting for 52 percent of the total area. Black cotton soils and alluvial soils constitute 23 per cent and 9 percent respectively. There are 22 different sub-categories within these three major soil types supporting the production of important crops such as paddy, maize, jowar, redgram, cotton, green gram, black gram, ground nut and diverse millets. The mean organic content of the Telangana soils is very low at 0.48 percent. Whereas soils are high in phosphorus and medium to high in available potassium. The soils of the state have deficiency of micronutrients such as Zinc (28%) and Boron (34%).

Soil resource mapping in Telangana was conducted on 1:250000 scale by using both remote sensing and conventional methods. The soil identified were correlated and classified as per Soil Taxonomy (Soil Survey staff, 1994). Telangana soils fall into six orders namely Alfisols, Aridisols, Inceptisols, Vertisols, Entisols and mollisols (See Figure15.1).

Figure 15.1 Soil orders of Telangana



The total area of Telangana soils covered by in percentage are Inceptisols - 37.23 percent, Entisols- 11.65 percent, Entisols-11.65 percent, Vertisols- 31.09 percent, Aridisols- 0.17 percent, Mollisols- 12.20 percent, Rock out crops- 6.98 percent.

The ICAR-National Bureau of Soil Survey and Land Use Planning (NBSSLUP), Nagpur prepared the Maps of soils (traditional) of Telangana in 2014. These maps are prepared on a scale of 1:40,000 (1 inch=10Km). The maps are prepared separately for erstwhile ten districts of Telangana. These maps give information about the various types of soils (by traditional names like red soils, black soils etc.) present in different districts of Telangana. We can know the extent (area occupied) of different types of soils and their distribution in different parts of the district.

Fertile soil is the basic requirement for good crop yields. "Soil fertility is the soil's ability to produce and reproduce. It is the aggregate status of a soil consequent on its physical, chemical, and biological well-being." (Stocking and Murnaghan 2001) whereas soil productivity is "The overall productive status of a soil arising from all aspects of its quality and status, such as its physical

and structural condition as well as its chemical content." (Stocking and Murnaghan 2001: 146).

Realizing the importance of assessing the fertility status of soils, Professor Jayashanker Telangana State Agricultural University (PJTSAU) has taken an initiative to prepare a broad soil fertility status of all the districts in the State. Soil samples of @10-15 per mandal were collected and analyzed for their nutrient status. The PJTSAU has surveyed the entire state, analyzed more than 6000 soil samples to prepare major, secondary, and micro-nutrient fertility maps of soils. These maps have helped in understanding the soil fertility problems both at district and mandal levels. Major problematic soil health issues in specific mandals in each district have been identified for taking suitable action. The soil fertility bulletins developed by the PJTSAU will form the basis for future efforts to develop detailed soil health information at specific field level for variable rate of management.

Soil sampling and soil testing programme is being organized by the agriculture department of the state to evaluate the status of soil fertility and to identify (salinity/acidity) if any, to improve fertility and to apply fertilizer based on soil test data.

Nearly 99 lakh soil health cards were distributed by the department of Agriculture during the period between 2015-16 to 2018-19. There are a total 26 functional soil testing labs which include regional (1), district level (9), mobile (4) and at AMC (12). Each lab has a capacity of analyzing 12,000 samples/annum.

Based on the soil types, suitable crop colonies are being encouraged by the department of agriculture. Telangana State hosts diverse crops such as millets, oil seeds and pulses, especially in the dryland regions. These crops contribute to soil, human, livestock health and nutritional security of vulnerable sections of the society. It is essential to preserve this agro-biodiversity for the benefit of future generations of Telangana state as encouragement to only few crops through regulated agriculture policy may lead to loss of rich agro-biodiversity impacting human, livestock, and environmental health. As compared to water guzzling crops, equal or more focus must be given to promotion of organic farming, minimizing the use of chemical fertilizers, water harvesting and conservation and to dryland crops which come up well on marginal soils and play immense role in supporting livelihoods of small and marginal farmers.

Challenges

- Effective community participation.
- Raising required funds for implementation of Programmes,
- Pressure on fringe forests for cattle grazing and other livelihood support schemes of local Government may be detrimental to forests.
- Natural calamities such as floods and wild forest fires rarely not in the prediction range and can cause loss to forests and its health.
- Developmental activities such as roads/rail through forests etc are fragmenting forests and danger to WL but a balance to be maintained.

15.3 The Way Forward

To achieve the SDG goal 15, it is essential to align the departmental Vision (15 years) to SDGs & Bangaru Telangana and integrate department wise schemes with SDGs in the budgets. Conservation of forests and biodiversity must be given top priority by the state. Departments must ensure a monitoring mechanism wherein the goal is monitored and the schemes helping in achieving the goal are strengthened regularly.

Sustainable Development Goal - 16

Peace, Justice and Building Strong Institutions



Vision

Building a just, fair and inclusive Telangana. The Vision of Telangana is to promote peace, justice and strong institutions that dispense justice that is equitable, just and fair to the last person standing in the queue. This is possible only through building strong institutions and the state is fully committed towards this aspect. Now, the objectives of the state in this regard of dispensation of justice to all involves reduction of violence, access to justice for all, building effective, accountable and inclusive institutions and guarantee inclusiveness in participation of all stakeholders and promoting peaceful and inclusive societies.

Achievements

- The State of Telangana achieved a score of 77 for the SDG 16 according to the latest SDG-INDIA Index (2019-20) prepared by NITI Aayog. Telangana attained 10th rank in the index among the Indian states.
- The high score secured by Telangana places it in the category of “front runner” under the SDG 16. Further, even the Baseline Index of NITI Aayog – SDG INDIA INDEX 2018 – places Telangana in the category of “front runner” with a score of 66.
- The data on number of victims trafficked (per one lakh population), the official data (State Crimes Record Bureau) shows that in 2019 (base year for the state) a total of 334 persons were trafficked (only one of them being male). Of 334 persons, 71 (21%) are children (below 18 years) and the remaining 263 (79%) are adults (above 18 years). The data also shows that all the 334 victims have been rescued

- SHE Teams is an innovative initiative of Telangana police aimed at curbing eve-teasing, harassment and stalking thereby ensuring safety and security of women in public places.
- Under a complementary initiative, Sakshi One Stop Centres (OSC) have been set up to provide integrated services for women victims of violence.
- In 2019, the ACB booked 173 cases as against a total of 139 cases in the previous year (2018). The ACB has achieved a conviction rate of 60% over the past three years.
- Telangana figures in the league of States in India that registered more than 90% of births. Furthermore, it is among the very few States in India that have universal registration of births (100% registered). The State of Telangana has already universalized the registration of births.
- Out of the total 1,33,004 elected representatives of RLBs, 67,486 are women
- The robust institutional system built by the State Government over the years has enabled the State to successfully tackle the unprecedented challenges posed by the two waves of COVID-19 pandemic in 2020 and 2021. Timely response for testing and treatment and strict implementation of lockdown rules have led to the containment of the pandemic and resulted in relatively low rates of infection and mortality.

Challenges

Rapid population growth poses challenges to the law enforcement machinery and judicial systems. The digital divide between urban and rural areas needs to be addressed to reduce corruption and to enhance transparency in governance.

The institutions like Lok Ayukta and the State Human Rights Mission to be strengthened for achieving the targets of SDG 16.

16.1 The Context

Justice that's Inclusive, Just and Fair

Sustainable development cannot be realised bereft of peace, security and good governance based on rule of law that safeguards the principles of equality, human rights and justice. The scourges of violence, crime, and exploitation not only undermine but also reverse development gains. The central focus of Goal 16 is on significantly reducing all forms of violence, and promoting rule of law at national and international levels to ensure equal access to justice for all. It not only aims to find enduring solutions to conflict and insecurity but also aims to end abuse, exploitation, trafficking, corruption and bribery; develop effective, accountable and transparent institutions and ensure inclusive and representative decision making at all levels.

Goal 16 of the SDGs consists of three interrelated dimensions of peace, justice, and strong institutions. Development, democracy, and peace are mutually reinforcing factors. Building robust institutions and promoting democracy is virtually impossible in a society vitiated by violence and where law and order is under constant threat. Experience from the Millennium Development Goals (MDGs) demonstrates that development is hampered by low peace and weak institutions. Therefore, the core components of Goal 16 revolve around certain prerequisites that facilitate sustainable development, that is - maintaining law and order in society, ensuring, and delivering justice and equity through judicial system, and building robust governance institutions that are representative, responsible, and accountable.

Goal 16 and its indicators are highly relevant to our country and State since our systems and institutions are not free from violence, discrimination, social conflicts and different forms of crimes and violations. According to the latest edition of the *Global Peace Index 2020* brought

out by the Institute of Economics and Peace, India ranks 139 among 163 countries ranked according to their level of peacefulness. The economic impact of violence on the global economy in 2019 was \$14.5 trillion in purchasing power parity (PPP) terms. India's rank indicates that it is among the least peaceful countries on the globe.

Global Social Progress Index 2020 (developed by Social Progress Imperative) ranks India at 117 out of 163 countries measured by the index (India's score is 56.80); regarding the indicator of inclusiveness, India is underperforming with a score of 35.39 and with a rank of 124. According to Social Progress Index (2017) for India, developed by Institute for Competitiveness, Telangana (along with Andhra Pradesh) ranks in the category of "Middle Social Progress" with a score of 56.13. The Goal 16 is closely interconnected with all the other Goals, particularly Goal 1 (no poverty), Goal 4 (quality education), Goal 5 (gender equality), Goal 8 (decent work and economic growth), Goal 10 (reduced inequalities) and Goal 11 (sustainable cities and communities).

As the largest democracy in the world, the canons of liberty, justice and equality are built into the Constitutional framework. A network of institutions at the national and sub-national levels, supported by the three pillars of the government – legislature, executive and judiciary – ensures that the mandate under the Goal 16 is effectively implemented. The Constitutionally mandated policy of positive discrimination (better known as reservations) ensures that the historically disadvantaged and underrepresented sections of society gain access to due representation in legislatures, public employment, and educational institutions. Although the maintenance of law and order is carried out at the States' level, to ensure uniformity across the country the Central Government creates the policy environment through national laws such as the Criminal Procedure Code and the Indian Penal Code.

The Right to Information Act, 2005 and the Unique Identity Number through *Aadhaar*

system are among the key initiatives taken by the Government of India to strengthen the institutional framework to provide equitable and non-discriminatory service and to empower citizens with access to information. About inclusiveness and participation in decision-making, the 73rd and 74th Constitutional Amendment Acts have engendered a truly representative democracy by strengthening governance at the grassroots level.

Under the Constitution of India, State Governments are primarily responsible for the maintenance of law and order which encompasses – prevention, registration, detection, and investigation of crime as well as prosecution of the perpetrators of crime. At the same time, the Central Government (Home Ministry) supports the efforts of the State Governments by providing financial assistance for modernization of their police forces.

The State of Telangana achieved a score of 77 for the SDG 16 according to the latest SDG-INDIA Index (2019-20) prepared by NITI Aayog. Telangana attained 10th rank in the index among the Indian states. The high score secured by Telangana places it in the category of “front runner” under the SDG 16. Further, even the Baseline Index of NITI Aayog – SDG INDIA INDEX 2018 – places Telangana in the category of “front runner” with a score of 66. The progress being made by Telangana towards achieving the SDG 16 target reflects its efforts and initiatives in the direction of creating a peaceful, equitable and inclusive society.

The Government of Telangana has launched several initiatives which will contribute to achieving the Goal 16 targets by 2030. The State Government is setting up 55 Gram Nyayalayas (village courts) across the state to provide speedy and easy access to justice to the rural poor through a cost-effective forum. The police machinery plays a pivotal part in maintaining law and order in the State. Acknowledging this priority, the State Government initiated steps for the modernization of police force

in the state; in its 2020-21 budget, the Government allocated Rs 5,461 crore for strengthening police force and maintaining law and order. SHE Teams, launched in 2014, is another noteworthy initiative of the State Government to ensure safety and security of women in public places. Free legal aid to the poor and vulnerable people and effective implementation of the Right to Information Act also figure prominently among the interventions towards attaining the targets under the SDG 16.

16.2 SDG-16 Key Indicators

Reducing All Forms of Violence and Related Deaths

The governments at all levels are expected to substantially lower all forms of violence—physical, psychological, and sexual--and its extreme manifestation of loss of human lives. The Telangana Government strives to control and reduce all types of crime in the state. The overall composite indicator to measure the progress on this front is the number of murders per 100,000 population. The data for this indicator is sourced from the State Crime Records Bureau. A total number of 716 murder cases were reported in the state in 2018 as against 739 in 2017 indicating a decrease of 3.1%. Rachakonda reported the highest number of murder cases (79) followed by Hyderabad (76) and Cyberabad (68). Wanaparthi registered the lowest number of 6 murders. The number of murders per 100,000 population in the state works out to 2.07 which is lower than the comparable national value of 2.17.

To prevent a range of lesser-known violent activities the Government of Telangana has enacted *The Telangana Prevention of Dangerous Activities of Bootleggers, Dacoits, Drug offenders, Goondas, Immoral Traffic offenders and Land Grabbers (Amendment) Act, 2018*. The amended Act expanded the scope of the Act by including a broad range of relatively new crimes.¹⁰⁴

¹⁰⁴ The crimes include (in addition to land grabbers): Spurious Seed Offenders, Insecticide Offenders, Fertilizer Offenders, Food Adulteration Offenders, Fake Document Offenders, Scheduled Commodities Offenders, Forest Offenders, Gaming Offenders, Sexual Offenders, Explosive Substances Offenders, Arms Offenders, Cyber Crime Offenders and White Collar or Financial Offenders.

Several targets of the goal for achieving peace and justice are interrelated and aim to usher in a more peaceful, equitable and harmonious social order. Thus, the related initiatives of the Government of Telangana that are aimed at reaching these targets are discussed in the following sections. The overall impact of the interventions of the Government in this context is likely to place the State on track to reach the national target of 1.2 murders per one lakh population by 2030.

Ending All Forms of Violence Against Children and Women

Each year, there are complaints of missing persons – of all ages and gender. According to the Association of Chief Police Officers (ACPO) a missing person is anyone whose whereabouts are unknown whatever the circumstances of disappearance. They will be considered missing until located and their well-being or otherwise established. The Ministry of Home Affairs (GoI) defines missing child as “a person below 18 years of age whose whereabouts are not known to the parents, legal guardians and any other persons who may be legally entrusted with the custody of the child, whatever may be the circumstances or causes of disappearance”.

While a large proportion of missing persons are found within a short span of time, there are others who are never located. Besides, some cases of missing persons are not reported to the police nor inquired into. Some young people and children run away from home unable to bear abuse and maltreatment. They become vulnerable to trafficking, violence, drug addition, sexual and other forms of exploitation and involvement in crime. Many of missing persons end up getting trafficked. The victims of trafficking can be male or female and children or adults; and human trafficking can take place within the country and beyond. Labour and sexual exploitation are the leading drivers of trafficking. To prevent exploitation of women and children, the Ministry of Home Affairs has issued a range of advisories on missing children and trafficking of humans. The leading factors driving trafficking are forced marriages, child labour, domestic help, and sexual exploitation.

Human trafficking is a serious crime and a grave violation of human rights. Every year, thousands of women, men, and children fall into the hands of traffickers, in their own countries and abroad. The UNODC defines trafficking in persons as “the recruitment, transportation, transfer, harbouring or receipt of persons, by means of threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation.”

With respect to the status in Telangana State regarding the number of victims trafficked (per one lakh population), the official data (State Crimes Record Bureau) shows that in 2019 (base year for the state) a total of 334 persons were trafficked (only one of them being male). Of 334 persons, 71 (21%) are children (below 18 years) and the remaining 263 (79%) are adults (above 18 years). The data also shows that all the 334 victims have been rescued. Regarding the purpose of trafficking, the official report states that “sexual exploitation or prostitution” was the purpose for almost all the cases reported.

Hundreds of children go missing every day across the country. At the national level, the trend related to the number of missing children for the past 3 years is as follows: 2016 (63,407), 2017 (63,349) and 2018 (67,134). And the corresponding statistics for Telangana State are – 3,679, 3,018 and 3,090 respectively. Telangana ranks seventh in the country when it comes to the number of missing children.

The Table 16.1 lays out the incidence of common forms of criminal activities in Telangana during 2014-2019. The statistics present mixed trends which indicate that regarding some crimes the trends have taken downward trajectories while in others there has been a slight upward trend. Overall, the trends underscore the need for continued efforts to contain crime.

Table 16.1 Trends in the Incidence of Crime in Telangana During 2014-2019

	2014	2015	2016	2017	2018	2019
Crimes against SCs*	1224	1379	1618	1714	1774	2074
Total murder cases	1283	1146	1032	781	761	822
Crimes against women	14147	15425	15374	15806	14521	16949
Missing persons	11012	11140	16134	13196	13939	16119
Missing children	2978	2616	3679	3018	3090	3228
Human trafficking cases	398	468	291	292	242	137
Corruption offences*	139	193	89	55	139	177
Kidnapping and abduction	1152	1044	1302	1560	1266	1321

*Includes all types of crimes committed against SCs. Corruption offences refer to the number of cases registered by Anti-Corruption Bureau (ACB).

Source: compiled from respective reports on Crime in Telangana and Crime in India (2014 to 2019).

In the context of prevention of trafficking and the subsequent exploitation, a set of related laws merit special mention: the Immoral Traffic (Prevention) Act, 1986 covers trafficking for commercial sexual exploitation while the Bonded Labour System (Abolition) Act, 1976 deals with punishment for employment of bonded labour. Acting on a Supreme Court order in 2015, the Government of India formulated a comprehensive bill to tackle human trafficking – the Trafficking of Persons (Prevention, Protection and Rehabilitation) Bill, 2018. But the Bill does not replace the existing laws on trafficking. As the name indicates, the Protection of Children from Sexual Offences (POCSO) Act, 2012 (amended in 2019) provides a robust legal framework for the protection of children from all types of sexual offences.

The Telangana Government set up anti-human trafficking units in different parts of the state, starting with Hyderabad. In fact, the initiatives in this regard can be traced to the setting up of Bharosa Centre in Hyderabad in 2016 which serves as an integrated one-stop support centre for women and children seeking or in need of legal, health and rehabilitation support. This was followed up by establishing special courts in

the district headquarters for speedy hearing and disposal of cases under the POCSO Act.

SHE Teams

SHE Teams is an innovative initiative of Telangana police aimed at curbing eve-teasing, harassment and stalking thereby ensuring safety and security of women in public places. SHE Teams respond to complaints and track the offenders in civil dress, particularly at the identified hot spots such as bus stops, educational institutions, ladies' hostels and parks. Depending on the nature and the gravity of stalking, different sections of the law are booked against the culprits. Launched in Hyderabad in 2014, SHE Teams have since been extended to the entire State. Over the years, 30,187 complaints have been received through different media – Dial 100, WhatsApp, Facebook, Hawk Eye app, email, Twitter, and direct walk-ins.

Under a complementary initiative, Sakhi One Stop Centres (OSC) have been set up to provide integrated services for women victims of violence. The OSC provides a range of services for violence-affected women, including the help of police, legal and psycho-social counseling, medical aid, and temporary shelter in an integrated manner, all under one roof.

Promoting Rule of Law and Ensuring Equal Access to Justice for All

The rule of law is fundamental to peace and security and political stability; to achieve economic and social progress and development; and to protect people's rights and fundamental freedoms. It is foundational to people's access to public services, curbing corruption, restraining the abuse of power, and to establishing the social contract between people and the state. Rule of law and development are strongly interlinked and strengthened rule of law-based society should be considered an outcome of the 2030 Agenda for SDGs.

The rule of law is a principle of governance in which all persons, institutions, and entities, public and private, including the State itself, are accountable to laws that are publicly promulgated, equally enforced, and independently adjudicated, and which are consistent with international human rights norms and standards. It requires measures to ensure adherence to the principles of supremacy of the law, equality before the law, accountability to the law, fairness in the application of the law, separation of powers, participation in decision-making, legal certainty, avoidance of arbitrariness, and procedural and legal transparency.

The Telangana Government is making steady progress towards reaching the basic national targets on this front, that is, the number of courts and judges per 100,000 population. The presence of adequate judicial infrastructure and personnel at all levels is a *sine qua non* for ensuring equal access to justice. With respect to the infrastructure related indicator, currently there are two courts per one lakh population in the State; and as for the related indicator concerning the judicial functionaries there are two judges per one lakh population. The current (baseline) status of Telangana compares favourably with that of other states. The Government of Telangana is moving in the right direction to increase the number of courts and

judges to ensure that citizens have improved access to the judicial system.

As per the data available on the National Judicial Data Grid (NJDG) the total number of pending cases in Telangana is 6,54,614, consisting of 2,72,964 civil cases and 3,81,650 criminal cases. And the total number of disposed cases in the State is 17,89,676 containing 7,53,192 civil cases and 10,36,484 criminal cases. There are 476 judges in the State, the same as the number of courts.¹⁰⁵ Police stations play critical role in maintaining order and peace since they are positioned at the cutting-edge of governance in the state. Currently there are 623 police stations, and the government is in the process of setting up 86 new police stations, particularly in view of the reorganization of the districts which has raised the number of districts in the state to 33. As a result, Telangana will have a total of 709 police stations, which works out to one station for every 50,000 people as against the national average of one station for every 97,000 people.

Consumer Courts

In an economy characterized by consumer sovereignty, it is an imperative to safeguard the rights of consumers as envisaged in the relevant consumer protection statutes which are amended from time to time. Consumer court is a special purpose court that deals with consumer complaints, disputes, and grievances. The purpose of establishing exclusive forums for consumer disputes is to ensure speedy resolution of disputes with minimum inconvenience and expense to consumers. The grievance redressal mechanism includes the Telangana State Consumer Disputes Redressal Commission at the State level and 12 District Consumer Forums.

Grassroots Courts and Free Legal Services

The Telangana Government has also taken a set of complementary initiatives to provide equitable

¹⁰⁵ https://njdg.ecourts.gov.in/njdgnew/?p=disposed_dashboard/info_mang (accessed on 10 November, 2020). The data reflects the cumulative status as on the date accessed.

access to justice for everyone. Acting on the Gram Nyayalayas Act 2008, the State Government has initiated the process of setting up 55 village courts (Gram Nyayalayas). The core objective of these grassroots level institutions is to provide access to justice to the citizens at their doorsteps and to ensure that opportunities for securing justice are not denied to any citizen by reason of economic, social, and other disabilities. The village courts function as mobile courts and exercise powers of both civil and criminal courts. The courts will be based at the Gram Panchayats. The judgments passed by the village courts are deemed to be decrees and are aimed at avoiding delays in execution.

Pursuant to the Article 39 A of the Constitution, free and competent legal services are being provided in the State to the eligible persons of the poor and weaker sections of the society. The provision of legal services is to ensure that the operation of the Legal System promotes justice based on equal opportunity, to provide free legal aid to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities.

Reducing Corruption and Bribery in All Their Forms

Corruption is a broad concept and bribery is just one of the dimensions of corruption. Corruption is an impediment to fair, accountable, and transparent governance. Keeping corruption in check is a precondition for effective and equitable delivery of citizen services as the governments continue to be the leading providers of a broad range of essential services. Reducing corruption hinges on the twin goals of effectively enforcing anti-corruption laws and raising public awareness about the ways and means of controlling corruption. The Anti Corruption Bureau (ACB) of Telangana has been playing a pivotal part in this regard. The Bureau aims to foster transparent and honest conduct on the part of government and public servants through effective enforcement of anti-corruption laws.

The mandated services of ACB include: to investigate complaints about corruption; to

recommend action on allegations of corruption; to advise on internal vigilance in Government Departments; and to advise citizens on matters of corruption. An aggrieved person can also report the instances of corruption on the toll-free number 1064. Another toll-free number (104) can be accessed by the people regarding the complaints related to Arogya Shree health insurance scheme. Credible information regarding corruption can be passed on to the ACB through any medium convenient to the complainant – ACB web site, email, WhatsApp, Facebook, and the toll-free number.

The mandate of the ACB is complemented by other State level institutions and mechanisms such as the *Lok Ayukta* (State level Ombudsperson) and the State Information Commission (constituted under the Right to Information Act, 2005). In 2019, the ACB booked 173 cases as against a total of 139 cases in the previous year (2018). The ACB has achieved a conviction rate of 60% over the past three years.

Effective, Accountable, and Transparent Institutions

The Government of Telangana has been in the forefront in embracing information technology for delivering an increasing number of citizen services. Use of Information and Communication Technology (ICT) in governance ensures efficiency and promotes transparency and accountability in extending public services to citizens. The Government of Telangana has taken a range of e-Governance initiatives for empowering citizens and smooth functioning of Government Departments which include MeeSeva (provision of government services through ICT), e-Procurement, e-Suvidha (online bill payment portal), e-Return (online payment of Commercial Taxes), and TS-iPASS (certification service for establishing business). The Government of Telangana has achieved 100% transactions through online and mobile applications in the State in 2019-20.

MeeSeva, an ESD (Electronic Service Delivery) platform is among the flagship e-Governance

initiatives of the State Government. MeeSeva leverages ICT in providing public services through universal and non-discriminatory access. It functions as an integrated one-stop solution for the citizens. ESD has added a host of mobile channels such as App, SMS, IVR, and USSD for delivery of G2C and B2C services to citizens. ESD currently facilitates the delivery of 550+ services of 40+ Government Departments to citizens of Telangana through multiple channels such as Mobile Apps, MeeSeva portal and MeeSeva centres - 4,498 authorized delivery points spread across the state; these centres are frontend points of the MeeSeva platform. The number of services offered through MeeSeva has increased from 235 in 2014 to 538 in 2019; similarly, the number of participating departments/agencies has risen to 102 in 2019 from a base value of 42 in 2014.¹⁰⁶

M-governance, delivered through an App called T App Folio, is a recent initiative of the Telangana Government which aims to revolutionize how services are being delivered in the state. With the widespread use of smartphones in the country it was deemed necessary to create an app-based service platform which will act as an anytime, anywhere solution to G2C service delivery. It currently hosts 210 services and is witnessing a rapid expansion. T Wallet is a digital wallet that citizens can use to make payments for both government and private transactions to avail a range of services. T Wallet can also be used to transfer funds to bank accounts through IMPS.

All bodies offering public utilities in the State such as water supply, electricity, sanitation, and transport present a wide range of options to citizens to provide improved services and to address their grievances. The channels include dedicated toll-free numbers, mobile apps, web portals and social media options. These initiatives, coupled with consumer forums

and the Right to Information Act, would go a long way in not only empowering the citizen but also ensuring equity, transparency, and accountability in providing essential civic services.

Universal Legal Identity and Birth Registration

The Government of Telangana has made remarkable progress pertaining to the two leading indicators of this goal: (1) Percentage of births registered (2) Proportion of population covered under *Aadhaar*. The proportion of children under five years of age whose births have been registered with a civil authority is considered as an important monitoring indicator in achieving the target. The country level performance in this regard shows that a considerable number of countries fall short of achieving universal birth registration. The vital life cycle events of births and deaths indicate the legal existence of the citizen and hence registration of these events is critical for sustainable development. From the rights perspective, registration of birth is considered as a right of every child as it establishes their legal identity.

In India, the *Registration of Births and Deaths Act, 1969* makes it mandatory to report births and deaths to *Registrar of Births and Deaths*. But the performance of the country until recently has been far short of universal registration of such life events. According to latest report¹⁰⁷ of Office of the Registrar General of India (RGI) based on its Civil Registration System (CRS), the level of registration of births has increased to 89.3% of total births in 2018 from 81.3% in 2009.

Telangana figures in the league of States in India that registered more than 90% of births. Furthermore, it is among the very few states in India that have universal registration of births (100% registered). The State of Telangana has already universalized the registration of births.

¹⁰⁶ Socio-Economic Outlook 2020, Planning Department, Government of Telangana

¹⁰⁷ RGI (2018). Vital Statistics of India Based on the Civil Registration System 2018, Vital Statistics Division, Civil Registration System, Officer of the Registrar General of India, Ministry of Home Affairs, Government of India, Accessed at: https://censusindia.gov.in/2011-Common/CRS_2018/crs2018_20072020.pdf, on 10/11/2020.

The unique identity provided to all residents of India through *Aadhaar* system is revolutionizing governance in the country. The UIDAI (Unique Identification Authority of India) administers the *Aadhaar* system in the country. The first 12-digit UID number was issued in 2010; so far, the UIDAI has issued more than 126 crore *Aadhaar* numbers. The unique identity is aimed at providing good governance, efficient, transparent, and targeted delivery of subsidies, benefits, and services. The *Aadhaar* is an integral part of the revolutionary e-governance initiatives of India at the Centre and the State levels. *Aadhaar*-based Direct Benefit Transfer has provided enhanced transparency and accountability in the implementation of welfare schemes.

Aadhaar is not only a tool of empowerment, but it also helps to curb tax evasion, money laundering and *benami* transactions. It would also bring about greater financial inclusion and tax compliance. The unique identity will facilitate India's march towards attaining the global SDGs. Telangana State has achieved 100 per cent coverage of population under *Aadhaar* (issued 3.93 crore *Aadhaar* cards which is the projected population of 2019-20).

Inclusive Institutions

Inclusive institutions are fundamental to achieving the goal of sustainable development. Acknowledging this imperative, India has made positive discrimination (better known as reservations) as part of the Constitutional mandate. But the quantum of reservations provided to the under-represented sections varies from State to State – subject to the ceiling prescribed by the judiciary. As for Telangana, the Scheduled Castes and the Scheduled Tribes are provided reservations in proportion to their share in the State's population.

Reservations for women are governed by the Constitutional provisions. Currently women hold 50.74% of the positions in the Rural Local Bodies (RLBs) of Telangana, that is, from Gram Panchayat to Zilla Praja Parishad. In other words, out of the total 1,33,004 elected representatives of

RLBs, 67,486 are women. But women are under-represented in the legislative bodies at the State and national levels. Acting on its vision for Telangana, the State Legislature passed a resolution endorsing the key provision of the Constitutional amendment bill (Women's Reservation Bill) that provides 33% reservation for women in the Lok Sabha and State legislatures.

The Telangana Government implements the constitutionally mandated reservations for the disadvantaged and the underrepresented socio-religious groups of the State. The current reservation system ensures the following pattern: Scheduled Castes (15%), Scheduled Tribes (6%), Backward Classes (29%). The 29% reservation for the BC category includes 4% reservation for minorities. In line with the Central Government's recent policy, the Telangana Government instituted 10% reservations for the eligible EWSs (Economically Weaker Sections) who are not covered by the existing scheme of reservations for SCs, STs and OBCs. In 2017, the State Legislature passed a Bill providing 12% reservation for backward sections among Muslims – in view of the increased proportion of Muslim population in Telangana State following the bifurcation of Andhra Pradesh in 2014. However, the policy has not yet come into effect in view of the 50% cap on the quantum of reservations pegged by the Supreme Court.

Recent Initiatives

The Telangana Government has taken a slew of initiatives with a view to ensuring justice and equity and to build strong, representative and accessible institutions at all levels. Key interventions in this regard are briefly presented in this section. In order to decentralise administration and to make governance more inclusive the State Government reorganised the erstwhile 10 districts into 33 districts. This would also result in other positive spin-offs such as – it reduces transaction costs of citizens and saves their time; accelerated improvements in basic physical and social infrastructure; and faster urbanisation leading to increased livelihood opportunities and higher economic growth. The decentralisation drive of the

State Government has also resulted in the creation of new governance units at all levels: the number of Revenue Divisions has increased from 43 to 74; Mandals from 464 to 593; Gram Panchayats from 8,368 to 12,770; Municipal Corporations from 6 to 13; and Municipalities from 68 to 128.

The State Government has taken proactive initiatives to reform land administration in the State in order to attain greater efficiency, accuracy and transparency and to stave off human intervention and rent-seeking. The ultimate aim is to empower the citizen through smooth and hassle-free transactions. The leading intervention in this regard is Dharani – an online portal of integrated land records management system. It combines land registration and administration services functioning as a single source for entire gamut of land administration functions. User can view the land status online on Dharani portal. Key features of Dharani system include: Workflow automation; backend digitisation; integration of various related Departments; combining registration and land records functions; single source of truth for all data relating to land records; automatic trigger for mutation after registration; and real time update of data.

Acknowledging the long overdue reforms in the governance of rural and urban local bodies the Telangana Government has taken several initiatives. To ensure effective, responsive and representative governance that reflects the needs and aspirations of the people, the State Government enacted two legislations – the Telangana Municipalities Act, 2019 and the Telangana Panchayati Raj Act, 2018. The new Municipalities Act will make governance in urban local bodies more transparent, time-bound, accountable and citizen-centric. The Act will promote greenery in the municipal areas and preparation of budgets in a scientific manner. It will also considerably scale down human interface and ensure that services are extended within the stipulated timelines. The reforms would pave the way for participatory democracy, self-certification system and bring in penalties for deviations from norms and incentives for compliance.

Similarly, the Panchayati Raj Act, 2018 provides a clear institutional and governance structure for Gram Panchayats (GPs) and also defines the powers, roles and responsibilities and accountability standards for key functionaries. The Act has been given form and implementation momentum through three rounds of *Palle Pragathi* initiative, the Government's flagship scheme for rural local governance. The Act facilitated the formation of 4,383 new GPs and moved the governance closer to the people. It also introduced a monitoring system thereby improving the performance and effectiveness of GPs. And the reservation of 50% of seats in rural local bodies for women has contributed to their political empowerment. The provision for mandatory conduct of GP meeting at least once in a month and Gram Sabhas once in every two months has visibly enhanced the accountability levels. The Act ensured timely and regular release of funds directly to the accounts of PRIs thereby eliminating the intermediate layers.

The initiatives taken by the Telangana Government have contributed to greater levels of peace, stability, efficiency and trust and made the State investor-friendly in several respects and improved its ranking in ease of doing business. Since 2014 Telangana State attracted investments to the tune of \$ 21 billion. The robust institutional system built by the State Government over the years has enabled the State to successfully tackle the unprecedented challenges posed by the two waves of Covid-19 pandemic in 2020 and 2021. Timely response for testing and treatment and strict implementation of lockdown rules have led to the containment of the pandemic and resulted in relatively low rates of infection and mortality.

16.3 The Way Forward

Development will be sustained if it is supported by durable peace, equal access to justice and strong and inclusive institutions. The Telangana Government's vision aims at rebuilding Telangana on the foundations of democracy in partnership with all people, governance based on the rule of law while protecting civil rights. "Required number of judges

are being recruited and the number of courts will also be increased". The interventions made by the Telangana Government over the years have started yielding results on the expected lines. For instance, the extremist violence and encounter deaths have almost become a thing of the past. However, there are certain areas that need greater policy attention. Initiatives are under way regarding the following:

1. The need for data availability at the required level of disaggregation and its comparability with national and international indicators is being attended to.
2. Rapid population growth poses challenges to the law enforcement machinery and judicial systems; to address the challenges the State Government has initiated measures to improve the infrastructure and enhance the human resource capacity.
3. The digital divide between urban and rural areas needs to be addressed to make e-governance and m-governance initiatives more inclusive since such interventions reduce corruption and enhance transparency in governance.
4. The implementation of the Right to Information Act, 2005 needs to be made more effective and efficient.
5. It is also an imperative to strengthen the institutions of Lok Ayukta and the State Human Rights Commission.
6. The State Government has initiated the process towards providing greater representation to Backward Classes and other vulnerable sections in the governance.

Table 16.2 SDG 16 Targets and Indicators

State Indicator No	Indicators	Status in 2019-20 (Baseline Value)	Target 2022-23	Target 2025-26	Target 2030-31
16.1.1.1	Number of murders per 100,000 population	2.07			1.2
16.2.1.1	Number of victims trafficked (gender-wise)	122 (male) 377 (female)			
16.2.3.1	Number of missing children (Report on Missing Women and Children in India, 2019) - data for the year 2018	3,090			
16.3.1.1	Number of courts per one lakh population	2			
16.3.2.1	Number of judges (all levels) per one lakh population	2			
16.5.1.1	Number of public functionaries booked/arrested by ACB in corruption cases.	173			
16.6.1.1	Use of ICT – online and mobile applications	100%	100%	100%	100%
16.7.1.1	Percentage of seats held by women in Rural Local Bodies (RLDs)	50.74%			
16.7.2.1	Proportion of Gram Panchayats covered under social audit	12,769 (100%)	100%	100%	100%
16.9.1.1	Percentage of births registered	100% births registered: 2,94,010 (CDMA) 1,63,309 (GHMC) 4,57,319 (Total)	100%	100%	100%
16.9.2.1	Proportion of population covered under Aadhaar	100%	100%	100%	100%

List of Acronyms

ACB	Anti-Corruption Bureau
ACPO	Association of Chief Police Officers
ADSI	Accidental Deaths and Suicides in India
AE	Actual Expenditure
AFSC	Antyodaya Food Security Cards
AI	Artificial Intelligence
AIDS	Acquired Immunodeficiency Syndrome
AIMS	All India Institutes of Medical Sciences
AISHE	All India Survey of Higher Education
AJAY	Atal Jyoti Yojana
ALEAP	Association of Lady Entrepreneurs of Andhra Pradesh
ALF	Area Level Federations
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwives
AP	Annapurna Cards
AP	Andhra Pradesh
APMC	Agriculture Produce Market Committees
App	Application
ARSH	Adolescent Reproductive & Sexual Health
ART	Antiretroviral Therapy
ASER	Annual Status of Education Report
ASHA	Accredited Social Health Activist
AT&C	Aggregate Technical and Commercial
ATMs	Automated Teller Machine
AWC	Anganwadi Centres
AYUSH	Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy
B.Ed	Bachelor of Education
BBBP	Beti Bachao-Beti Padhao
BC	Backward Classes
BC	Backward Castes
BCG	Bacillus Calmette-Guerin
BCM	Billion Cubic Meters
BCWD	Backward Classes Welfare Department
BHK	Bedroom, Hall, Kitchen
BIC	Bamboo Industrial Cuts
BIOSOT	Biodiversity Conservation Society of Telangana

BMC	Biodiversity Management Committees
BMI	Body Mass Index
BMW	Bio-Medical Waste
BPL	Below Poverty Line
BSNL	Bharat Sanchar Nigam Limited
BT	Bituminous
CAGR	Compounded Annual Growth Rate
CAL	Computer Assisted Learning
CAMPA	Compensatory Afforestation Fund Management and Planning Authority
CBNAAT	Cartridge-Based Nucleic Acid Amplification Test
CBWTF	Common Bio-Medical Waste Treatment Facilities
CC	Cement Concrete
CCDP	Conservation-Cum-Development Plan
CCMS	Centralised Control and Monitoring System
CCTV	Closed- Circuit Television
CEEW	Council on Energy, Environment and Water
CEP	Continuing Education Programme
CESS	Centre for Economic and Social Studies
CGRF	Consumer Grievance Redressal Forums
CGWB	Central Ground Water Board
CHC	Community Health Centres
CI	Cropping Intensity
CII	Confederation of Indian Industry
CiI	Crimes in India
CiT	Crime in Telangana
CKM	Circuit Kilometre
CLRI	Central Leather Research Unit
CM	Chief Minister
CM & CD	Cross Masonry and Cross Drainage
CMR	Child Mortality Rate
CMST	Chief Minister Scheduled Tribe
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COE	Centre of Excellence
CoI	Constitution of India
COVID	Coronavirus Disease
COVID-19	Coronavirus Disease 2019

COWE	Confederation of Women Entrepreneurs
CPC	Criminal Procedure Code
CPCB	Central Pollution Control Board
CRMP	Comprehensive Road Maintenance Programme
CRS	Civil Registration System
CRSP	Central Rural Sanitation Programme
CS	Chief Secretary
CSR	Child Sex Ratio
CSS	Centrally Sponsored Schemes
DACNET	Department of Agricultural & Co-operation Network
DAH	Department of Animal Husbandry
DAY-NRLM	Deendayal Antyodaya Yojana – National Rural Livelihood Mission
DAY-NULM	Deendayal Antyodaya Yojana – National Urban Livelihood Mission
DBT	Direct Benefit Transfer
DBTL	Direct Benefit Transfer for LPG
DDF	Dairy Development and Fisheries
DDP	District Domestic Product
DDS	Deccan Development Society
DDUGJY	Deen Dayal Upadhyaya Gram Jyoti Yojana
DDU-GKY	Deendayal Upadhyaya Grameen Kaushal Yojana
DDU-GKY	Deen Dayal Upadhyay Gramin Kaushal Yojana
DET	Departmental Extraction of Timber and Bamboo
DFCS	District Fishermen Cooperative Societies
DGHS	Directorate General of Health Services
DGPS	Differential Geographic Positioning System
DICCI	Dalit Indian Chamber of Commerce and Industry
DICs	District Industries Centres
DIET	District Institute for Education and Training
DISCOM	Distribution Company
DLHS	District-Level Household and Facility Survey
DoF	Department of Fisheries
DOST	Degree Online Services, Telangana
DP	Deer Park
DPEP	District Primary Education Programme
DPIIT	Department for Promotion of Industry and Internal Trade
DPR	Detailed Project Reports
DPR	Detailed Project Report
DRI	Directorate of Revenue Intelligence

E&C Department	Electronics and Communication Engineering Department
EBB	Educationally Backward Blocks
ECBC	Energy Conservation Building Code
ECCE	Early Childhood Care and Education
ECLGS	Emergency Credit Line Guarantee Scheme
EDC	Eco-Development Committees
EDCs	Enterprise Development Centres
EEI	Energy Efficiency Index
EESL	Energy Efficiency Services Limited
EFST	Environment, Forests, Science and Technology
EMS	Emergency Medical Services
e-NAM	e-NATIONAL Agriculture Market
EODB	Ease of Doing Business
EPS	Employee Pension Scheme
EPTRI	Environment Protection Training and Research Institute
ESD	Electronic Service Delivery
ESI	Employees State Insurance
ESS	Economic Support Scheme
EST&P	Employment through Skill Training and Placement
EUS	Employment-Unemployment Survey
EVESP	Electric Vehicle and Energy Storage Policy
EVS	Environmental Studies
EWS	Economically Weaker Section
FAME II	Faster Adoption and Manufacturing of Hybrid and Electric Vehicles
FAO	Food and Agriculture Organization
FAW	Fall Army Worm
FC	Finance Commission
FCI	Food Corporation of India
FCS	Fishermen Cooperative Societies
FDI	Foreign Direct Investment
FI	Financial Institution
FISHCOPFED	National Federation of Fishers Cooperatives Ltd
FLFPR	Female Labour Force Participation Rate
FLN	Foundational Literacy and Numeracy
FMCS	Fishermen Marketing Cooperative Societies
FPC	Farmer Producer Company
FPG	Farmer Producer Groups
FPO	Farmer Producer Organisations

FSC	Food Security Card
FSI	Forestry Survey of India
FWCS	Fisher Women Cooperative Societies
FYP	Five Year Plan
GAD	General Administration Department
GBC	Gender Budget Cell
GBDS	Global Burden of Diseases Study
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GEC	Groundwater Estimation Committee
GECL	Guaranteed Emergency Credit Line
GENCO	Generation Company
GER	Gross Enrolment Ratio
GHG	Green House Gas
GHMC	Greater Hyderabad Municipal Corporation
GHP	Green Highways Policy
GII	Gender Inequality Index
GIS	Geographic Information System
GM	Gram Nyayalayas
GoI	Government of India
GoT	Government of Telangana
GP	Gram Panchayats
GPI	Global Peace Index
GR	Growth Rate
GrAMs	Agriculture and Rural Markets
GRID	Growth in Dispersion
GSDP	Gross State Domestic Product
GSPI	Global Social Progress Index
GST	Goods and Services Tax
GSVA	Gross State Value Added
GVA	Gross Value Added
GWH	Gigawatt Hour
HEIs	Higher Education Institutions
HHs	Households
HIV	Human Immunodeficiency Virus
HLEG	High-Level Expert Group Report
HMDA	Hyderabad Metropolitan Development Authority
HMRL	High Metro Rail Limited

HMT	Hindustan Machine Tools
HMWSSB	Hyderabad Metropolitan Water Supply and Sewerage Board
HRH	Human Resources for Healthcare
HUDCO	Housing and Urban Development Corporation Limited
HVDS	High Voltage Distribution System Project
HWC	Health and Wellness Centres
I and CAD	Irrigation & Command Area Development
ICDS	Integrated Child Development Services
ICPD	International Conference on Population and Development
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICT	Information and Communication Technology
IDWHP	Integrated Development of Wildlife Habitats Programme
IEC	Information, Education, and Communication
IEP	Institute of Economics and Peace
IFDS	Integrated Fisheries Development Scheme
IFS	Indian Forest Service
IHD	Ischemic Heart Diseases
IHHL	Individual Household Latrines
IHME	Institute of Health Metrics and Evaluation
IMF	International Monetary Fund
IMPS	Immediate Payment Service
IMR	Infant Mortality Rate
INM	Integrated Nutrient Management
IPC	Indian Penal Code
IPCC	Intergovernmental Panel on Climate Change
IRS	Indoor Residual Spray
ISB	Indian School of Business
ISSE	Integrated Scheme for School Education
IT	Information Technology
ITDA	Integrated Tribal Development Agency
ITeS	Information Technology Enabled Services
ITIR	Information Technology Investment Region
IUCD	Intrauterine Contraceptive Device
IUD	Intrauterine Device
IVR	Interactive Voice Response
IWMI	International Water Management Institute
IWRM	Implement Integrated Water Resources Management
JMP	Joint Monitoring Programme

JSSK	Janani Shishu Suraksha Karyakram
KG	Kindergarten
Kg/Ha	Kilograms Per Hectare
KGBV	Kasturba Gandhi Balika Vidyalaya
Km	Kilometre
KMC	Kangaroo Mother Care
Kms	Kilometres
KNRUHS	Kaloji Narayana Rao University for Health Sciences
KV	Kilovolt
KWh	Kilo Watt Hours
KYK	Krishi Vigyan Kendras
LCC	Local Complaints Committee
LDCs	Least Developed Countries
LED	Light Emitting Diode
LET&F	Labour Employment Training and Factories Department
LF	Lymphatic Filariasis
LIC	Life Insurance Corporation
LPCD	Liters Per Capita Per Day
LPG	Liquefied Petroleum Gas
M.A.M	Moderate Acute Malnutrition
MA	Market Aggregator
MBCs	Most Backward Classes
MC	Municipal Corporation
MCCD	Medical Certification of Cause of Death
MCH	Maternal and Child Health
MDDL	Minimum Draw Down Levels
MDG	Millennium Development Goals
MDM	Mid-day-Meal
MEPMA	Mission for Elimination of Poverty in Municipal Areas
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MHA	Ministry of Home Affairs
MHFW	Ministry of Health and Family Welfare
MI	Micro-Irrigation
MIS	Management Information System
MJPTBCWREIS	Mahatma Jyotiba Phule Telangana Backward Classes Welfare Residential Educational Institutions Society
MK	Mission Kakatiya

MLAs	Member of Legislative Assembly
MLD	Million Litres of Sewage Water Per Day
MMG	Matsya Mitra Groups
MMR	Maternal Mortality Rate
MoHFW	Ministry of Health and Family Welfare
MoRD	Ministry of Rural Development
MoSPI	Ministry of Statistics and Programme Implementation
MoU	Memorandum of Understanding
MPPs	Members of Provincial Parliaments
MPs	Member of Parliament
MPTC	Mandal Parishad Territorial Constituency
MRU	Medical Research Unit
MSK	Mahila Shakti Kendra
MSME	Micro, Small and Medium Enterprises
MT	Metric Tonne
MTF	Maintenance Fee
MUDRA	Micro Units Development and Refinance Agency
MW	Mega- Watt
MWCD	Ministry of Women and Child Development
NABARD	National Bank for Agriculture and Rural Development
NABCONS	NABARD Consultancy Services
NACO	National AIDS Control Organisation
NAFP	National Agro-Forestry Policy
NAMP	National Air Quality Monitoring Program
NAP	National Afforestation Programme
NAPCC	National Action Plan on Climate Change
NARI	Nari Assistance Revival of Industry
NAS	National Achievement Survey
NASA	National Aeronautics and Space Administration
NASSCOM	National Association of Software and Services Companies
NBA	Nirmal Bharath Abhiyan
NBFC	Non-banking Finance Company
NBSSLUP	National Bureau of Soil Survey and Land Use Planning
NCB	Narcotic Control Bureau
NCDs	Non-communicable Diseases
NCEUS	National Commission for Enterprises in the Unorganized Sector
NCRB	National Crime Record Bureau
NDPS	National Narcotics Drugs and Psychotropic Substance

NEET	Not in Employment, Education and Training
NeGP-A	National e-Governance Plan - Agriculture
NEP	National Education Policy
NEP	National Environment Policy
NER	Net Enrolment Ratio
NFDB	National Fisheries Development Board
NFHS	National Family Health Survey
NFSA	National Food Security Act
NFSM	National Food Security Mission
NGO	Non-Governmental Organization
NGT	National Green Tribunal
NH	National Highway
NHED	Nutrition and Health Education
NHM	National Health Mission
NI	National Indicator
NIF	National Indicator Framework
NIMS	National Institute of Medical Statistics
NIMZ	National Investment and Manufacturing Zone
NITI	National Institute for Transforming India
NJDG	National Judicial Data Grid
NKM	Neel Kranti Mission
NLM	National Literacy Mission
NMSA	National Mission for Sustainable Agriculture
NO	Nitric Oxide
NP	National Park
NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke
NPDCCL	Northern Power Distribution Company Limited
NQAS	National Quality Assurance Standards
NR	Non-Residential
NRC	Nutrition Rehabilitation Centres
NRDWP	National Rural Drinking Water Programme
NRUM	National Rurban Mission
NSDC	National Skill Development Corporation
NSDP	Net State Domestic Product
NSO	National Statistical Office
NSS	National Statistical Survey
NSS KI	National Sample Survey Key Indicators

NSSO	National Sample Survey Office
NTFP	Non-Timber Forest Products
NWMP	National Water Quality Monitoring Programme
OBB	Operation Black Board
OBC	Other Backward Class
OD	Open Defecation
ODF	Open Defecation Free
OE	Over Exploited
OFM	One Full Meal
OHSR	Overhead Water Storage Reservoir
OOP	Out of Pocket
OPHI	Oxford Poverty and Human Development Initiative
ORR	Outer-Ring-Road
OSC	One Stop Centres
P&L	Pregnant and Lactating
PA	Per Annum
PAC	Project Approval Committee
PACS	Primary Agriculture Cooperative Societies
PAP	Poverty Alleviation Programs
PBR	Peoples Biodiversity Registrar
PBW	Pink Boll Worm
PC	Partially Covered
PC and PNDT	Pre-Conception and Pre-Natal Diagnostic Techniques
PCNR	Programme on Conservation of Natural Resources
PCNSDP	Per Capita Net State Domestic Product
PDS	Public Distribution System
PG	Post-Graduation
PGR	Poverty Gap Ratio
PHC	Primary Health Centres
PHFI	Public Health Foundation of India
PHME	PHME: Public Health Municipal Engineering
PHR	Poverty Head Count Ratio
PIA	Project Implementing Agencies
PJTSAU	Professor Jayashanker Telangana State Agricultural University
PKVY	Paramparagat Krishi Vikas Yojana Scheme
PLF	Plant Load Factor
PLFS	Periodic Labour Force Survey
PLP	Post-Literacy Programme

PM	Particulate Matter
PM KUSUM	Pradhan Mantri Kisan Urja Surakhs evam Uttham Mahabhiyan
PMAY	Pradhan Mantri Awas Yojana
PMGSY	Pradhan Mantri Gram Sadak Yojana
PMJDY	Pradhan Mantri Jan-Dhan Yojana
PMJJBY	Pradhan Mantri Jeevan Jyothi Bheema Yojana
PMKVY	Prime Minister Kaushal Vikas Yojana
PMMSY	Pradhan Mantri Mahila Sashaktikaran Yojana
PMMSY	Pradhan Mantri Matsay Sampada Yojana
PMSBHGYS	Pradhan Mantri Sahaj Bijli Har Ghar Yojana- Saubhagya
PMSBY	Pradhan Mantri Suraksha Bhima Yojana
PMSVA Nidhi	Prime Minister Street Vendor Atma Nirbhar Nidhi
PMUY	Pradhan Mantri Ujjwala Yojana
POCSO	Protection of Children from Sexual Offences
PP	Palle Pragathi
PPE	Personal Protective Equipment
PPP	Palle Pragathi Programme
PPP	Purchasing Power Parity
PPP	Public Private Partnership
PPV	Palle Prakrithi Vanam
PRA	Panchayati Raj Act
PRECIS	Providing Regional Climates for Impacts Studies
PRED	Panchayat Raj Engineering Department
PRI	Panchayat Raj Institutions
PRIDE	Telangana State Program for Rapid Incubation of Dalit Entrepreneurs
PRIs	Panchayati Raj Institutions
PSU	Public Sector Undertakings
PVTGs	Particularly Vulnerable Tribal Groups
PWID	People Who Inject Drugs
PWS	Piped Water Supply
QA	Quality Affected
R&B	Relationship and Business
R&D	Research and Development
RAS	Re-circulatory Aquaculture Systems
RB	Rythu Bandu
RBD	Registrar of Births and Deaths
RE	Renewable Energy
RES	Renewable Energy Sources

RGI	Registrar General of India
RIA	Right to Information Act
RICH	Research Industry Collaboration Hub
RIDF	Rural Infrastructure Development Fund
RKSK	Rashtriya Kishor Swasthya Karyakram
RKVY	Rashtriya Krishi Vikas Yojana
RLB	Rural Local Bodies
RMI	Renovation, Modernization, and Improvisation
RMNCH	Reproductive, Maternal, New-born and Child Health
RMSA	Rashtriya Madhyamik Shiksha Abhiyan
RNTCP	Revised National Tuberculosis Control Programme
RO	Regional Office
RoFR	Recognition of Forest Rights
RSETI	Rural Self-Employment Training Institutes
RTE	Right of Children to Free and Compulsory Education
RTF	Reimbursement of Tuition Fee
RTI	Reproductive Tract Infections
RUSA	Rashtriya Uchchatar Shiksha Abhiyan
RWH	Rainwater Harvesting
RWHTP	Rain Water Harvesting Theme Park
RWS&S	Rural Water Supply and Sanitation
S.A.M	Severe Acute Malnutrition
S.U.W	Severe Under Weight
SAIDI	System Average Interruption Duration Index
SAPCC	State Action Plans on Climate Change
SBI	State Bank of India
SBM	Swachh Bharat Mission
SBM-G	Swachh Bharat Mission- Gramin
SC	Scheduled Caste
SC	Supreme Court
SCERT	State Council of Educational Research and Training
SCRB	State Crimes Record Bureau
SCSDF	Scheduled Castes Special Development Fund
SDC	Skill Development Centres
SDF	Special Development Fund
SDG	Sustainable Development Goals
SDGII	Sustainable Developmental Goals India Index
SEEI	State Energy Efficiency Index

SEP	Self-Employment Programme
SERP	Society for Elimination of Rural Poverty
SERP-TRIGP	Society for Elimination of Rural Poverty-Telangana Rural Inclusive Growth Project
SETWIN	Society for Employment Promotion and Training in Twin Cities
SEZ	Special Economic Zones
SFP	State Forest Policy
SGST	State Goods and Services Tax
SHC	Soil Health Card
SHE	Safety, Health and Environment
SHG	Self-Help Group
SHG BLP	SHG Bank Linkage Programme
SHG-BL	Self Help Group - Bank Linkage
SHRC	State Human Rights Commission
SIA	State Implementing Agency
SIF	State Indicator Framework
SL	State Legislatures
SLCMC	State Level Coordination and Monitoring Committee
SLNP	Street Lighting National Program
SLRM	Solid and Liquid Resource Management
SLSC	State Level Steering Committee
SM&ID	Social Mobilization & Institution Development
SME	Small Medium Enterprises
SMS	Short Message Service
SN	Supplementary nutrition
SNA	State Nodal Agency
SNCU	Special Newborn Care Units
SNP	Supplementary Nutrition Programs
SO ₂	Sulfur Dioxide
SoftNet	Society for Telangana Network
SPDCL S	Southern Power Distribution Company Limited
SPG	State Plan Grants
SPI	Social Progress Imperative
SPMRM	Shyam Prasad Mukherji Rurban Mission
SPV	Solar Photovoltaic
SR	Silvicultural Research
SRDP	Strategic Road Development Plan
SRH	Sexual and Reproductive Health

SRS	Software Requirement Specification
SSA	Sarva Shiksha Abhiyan
SSG	Swach Surekshana Grameen
SSWDS	Sewerage and Storm Water Drainage Schemes
ST	Scheduled Tribes
STI	Sexually Transmitted Infections
STPP	Singareni Thermal Power Project
STPs	Sewage Treatment Plants
STSDF	Scheduled Tribes Special Development Fund
SUH	Shelter for Urban Homeless
SUSV	Support to Urban Street Vendors
T&D	Transmission and Distribution
TASK	Telangana Academy for Skill and Knowledge
TB	Tuberculosis
TDWDCSL	Telangana Drinking Water Supply Corporation Limited
TDWSP	Telangana Drinking Water Supply Project
TEP	Technology Entrepreneurship Programme
TFR	Total Fertility Rate
TG	Transgender
TGA	Total Geographic Area
THH	Telanganaku Haritha Haram
T-Hub	Technology Hub
T-IDEA	Telangana State Industrial Development Entrepreneur Advancement
TIHCL	Telangana Industrial Health Clinic Limited
TIMS	Telangana Institute of Medical Sciences & Research
TISS	Tata Institute of Social Sciences
TKHH	Telangana Ku Haritha Haram
TLC	Total Literacy Campaign
TLF	Town Level Federations
TMA	Telangana Municipalities Act
TMC	Thousand Million Cubic
TMDP	Telangana Municipal Development Project
TMREIS	Telangana Minorities Residential Educational Institutions Society
TNREDCO	Telangana State Renewable Energy Development Corporation Limited
TPDS	Telangana Public Distribution System
TPP	Thermal Power Project
TPR	Teacher-pupil Ratio
TPRA	Telangana Panchayati Raj Act

T-PRIDE	Telangana State Program for Rapid Incubation of Dalit Entrepreneurs
TPS	Thermo-Plastic- Sheathed Cable
TRICOR	Telangana Scheduled Tribes Cooperative Finance Corporation Limited
TRIGP	Telangana Rural Inclusive Growth Project
TS	Telangana State
TSACS	Telangana State AIDS Control Society
TSAPCC	Telangana State Action Plans on Climate Change
T-SAT	Telangana Skills, Academic and Training
TSBB	Telangana State Biodiversity Board
TSC	Total Sanitation Campaign
TSCDRC	Telangana State Consumer Disputes Redressal Commission
TSCHE	Telangana State Council for Higher Education
TSCO	Telangana State Handloom Weavers Cooperative Society
TSDISCOM	Telangana State Distribution Company
TSECBC	Telangana State Energy Conservation Building Code
TSERC	Telangana State Electricity Regulatory Commission
TSEVP	Telangana Electric Vehicle Policy
TSFCOF	Telangana State Fishermen Cooperative Societies Federation
TSFD	Telangana State Forest Department
TSGENCO	Telangana State Power Generation Corporation Limited
TSHC	Telangana State Housing Corporation
TSHWCS	Telangana State Handloom Weavers Cooperative Society
TSIDC	Telangana State Industrial Development Corporation
TSIIC	Telangana State Industrial Infrastructure Corporation
TS-iPASS	Telangana State Industrial Project Approval and Self-Certification System
TS-iPASS	Telangana State Industrial Project Approval and Self-Certification System
TSKC	Telangana Skills and Knowledge Centre
TSLIPC	Telangana State Leather Industry Corporation
TSMDC	Telangana State Mineral Development Corporation
TSMPB	Telangana State Medicinal Plant Board
TSNPDCL	Northern Power Distribution Company of Telangana Limited
TSPCB	Telangana State Pollution Control Board
TSPSC	Telangana State Public Service Commission
TSREDCO	Telangana State Renewable Energy Development Corporation Limited
TSSDC	Telangana State Skill Development Corporation
TSSDM	Telangana State Skill Development Mission

TSSLDC	Telangana State Load Dispatch Centre
TSSOCA	Telangana State Organic Certification Authority
TSSP	Telangana State Solar Policy
TSSPDCL	Southern Power Distribution Company of Telangana Limited
TSSTEP	Telangana State Society for Training and Employment Promotion
TSTPC	Telangana State Trade Power Corporation
TSTRANSCO	Transmission Corporation of Telangana Limited
TSTS	Telangana State Technology Services
TSWCDC	Telangana State Women Cooperative Development Corporation
TSWPP	Telangana Wind Power Policy
TSWREIS	Telangana Social Welfare Residential Educational Institutions Society
TT	Tetanus Toxoid
T-TAP	Telangana Textile and Apparel Policy
TUFIDC	Telangana Urban Finance and Infrastructure Development Corporation
TV	Tele-Vision
TVC	Town Vending Committees
TVET	Technical and Vocational Education and Training
U5MR	Under-five Mortality Rate
UAM	Udyog Adhaar Memorandum
UC	Uncovered
U-DISE	Unified District Information on School Education
UGD	Underground Drainage
UHC	Urban Health Centres
UHC	Universal Health Coverage
UIDAI	Unique Identification Authority of India
UJALA	Unnat Jyoti by Affordable LEDs for All
UK	United Kingdom
ULB	Urban Local Bodies
ULBs	Urban Local Bodies
UMBP	Urban Mission Bhagiratha Project
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNODC	United Nations Office on Drugs and Crime
UPS	Uninterruptible Power Supply
USD	United States Dollar
USSD	Unstructured Supplementary Service Data
UT	Union Territory

VFX	Visual Effects
VLCs	Village Learning Circles
VLR	Vaddi Leni Runalu
VSS	Vana Samrakshna Samithis
WaLC	Water Leadership and Conservation
WASH	Water, Sanitation and Hygiene
WE-Hub	Women Entrepreneurs Hub
WHL	Women Helpline
WHO	World Health Organization
WHO-FCTC	WHO Framework Convention on Tobacco Control
WL	Wild Life
WLS	Wild Life Sanctuary
WPR	Workforce Participation Ratio
WSA	Water Spread Area
WSW	Women Safety Wings
WTO	World Trade Organisation
WUAs:	Water User Associations
ZP	Zilla Parishad
ZP	Zoological Park
ZPP	Zilla Praja Parishad
ZPTCs	Zilla Parishad Territorial Constituency

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