



A STUDY OF TELANGANA'S AGRICULTURAL DEVELOPMENT AND IRRIGATION

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Abstract

This paper studies the state of agriculture and irrigation in Telangana, especially from the point of view of agricultural growth corresponding to growth in irrigation. There has been growth in irrigation levels in Telangana, during the past three decades, although the perception that the region suffers from insufficiency of irrigation resources may still be valid. Most of this growth however has come from expansion of well irrigation using private capital, which has adverse implications for groundwater levels and is also contributing to the immiserisation of small and marginal peasants. The agricultural sector plays a pivotal role in the growth of the Telangana economy and lives of the people. Almost 60 percent of the state population depends on agriculture and allied activities and it is a major source of livelihood of the people. Similarly, Irrigation plays a vital role in the development of agriculture because it provides constant and assured water supply to the farm.

Introduction

The new State of Telangana came into existence on 2nd June 2014, Telangana, situated in the central stretch of the Indian Peninsula on the Deccan Plateau, is the 29th state of India and twelfth-largest state in the country with an extent of 114,840 square kilometres and a population of 35,286,757 (2011 census). Telangana is bordered by the states of Andhra Pradesh to the south and east, Maharashtra to the north and north-west, Karnataka to the west and Chhattisgarh to the north-east.

Telangana has the advantage of having most of the east flowing rivers in the heart of the state bringing in copious supplies from the Western and Eastern Ghats and the Deccan Plateau up to Bay of Bengal. However most of the flows occur only in 3 to 4 months of South West monsoon i.e., June to September. The annual rainfall is between 900 to 1500 mm in northern Telangana and 700 to 900 mm.

Telangana is a riverine state with major, medium and minor rivers. Of these two are major interstate rivers i.e., 1.Godavari and 2.Krishna. Godavari and Krishna flow through the heart of the state. Total water allocated to Projects in Telangana in Krishna basin is 299 TMC and Godavari basin is 954.23 TMC. Apart from the 2 major rivers, there are other 9 Nos. of small rivers such as Bhima, Dindi, Kinnerasani, Manjeera, Manair, Penganga, Pranahita, Peddavagu and Taliperu.

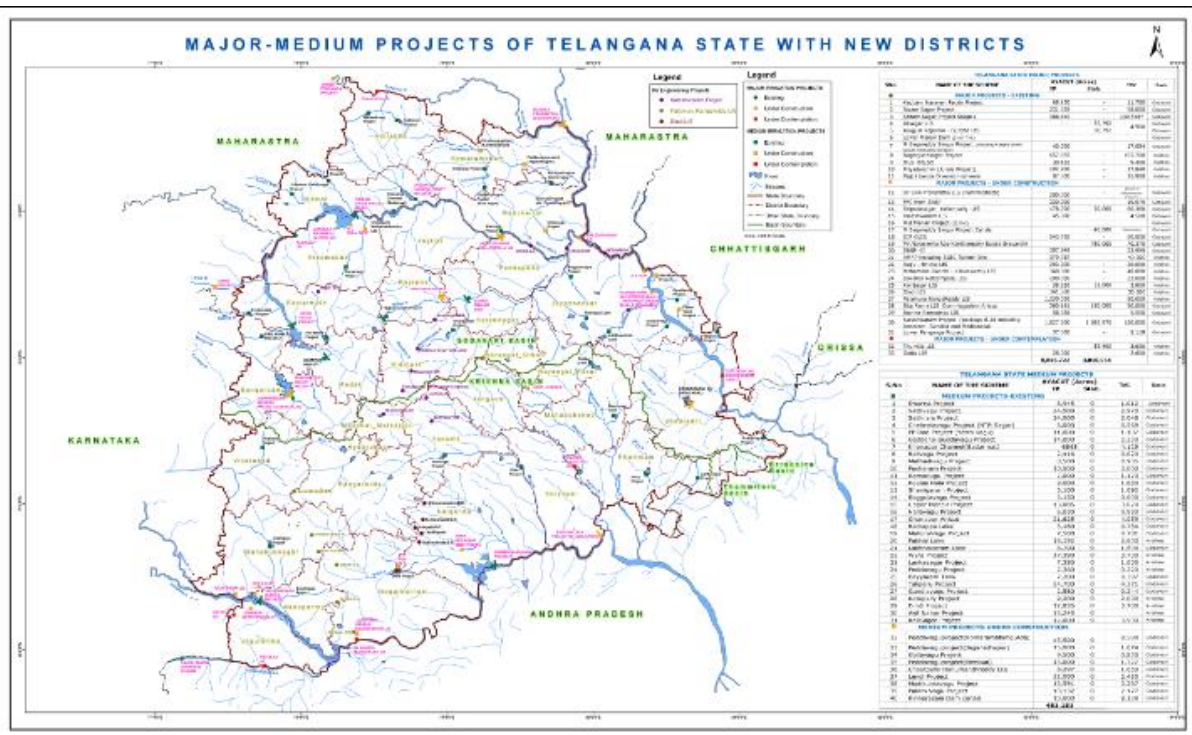
Telangana has a heritage of cultivation and irrigation dating back to several centuries. In the past, ancient Kings and rulers built lakes and reservoirs by constructing bunds and anicuts across rivers for creating irrigation potential as well as drinking water for the people. Big lakes like Ramappa, Pakhal, Laknavaram and many other irrigation works of Kakatiya period have become names to remember and are serving till today. The Mir Alam Tank is the finest

example in arched dam constructed across Musi River. The Ghanapur Anicut across Manjira with two canals called Fathenahar and Mahabobnahar, Pocharam lake, Osmansagar, Himayatsagar, Nizamsagar Project, Mannair Project, Dindi Project, Palair Project, Wyrā Project and Sarlasagar Projects are some of the magnificent contributions of the eminent Engineers of Hyderabad State under Nawab Ali Nawaz Jung Bahadur and other eminent Engineers during the Nizam's kingdom in Telangana. Groundwater based irrigation, which was started in India as early as "Indus Civilizations" got impetus during 3rd five-year plan. In India, at present 78 m ha of irrigation potential is created and 80 percent is utilized. One of the World's highest user of groundwater is India with 63 percent of its dynamic groundwater resources. Similarly, Telangana State is also utilizing the dynamic groundwater resources up to 65 percent. Groundwater a reliable source of irrigation with high yields and brings equity among its users as ~99 % of structures are owned by individuals. In the state, well irrigation increased from ~0.46 lakh ha from 1875 to 23.35 lakh ha during 2017–18 and well density increased to ~13 wells/km² leading to decrease in irrigation potential under each well to < 1 ha. As a result of it many challenges like water logging & salinity in canal command areas, over-exploitation leading to de-saturation of shallow aquifers, underutilization in north eastern part, groundwater pollution (both geogenic and anthropogenic) and sustainability, etc have cropped up. The management steps taken up in water sector like water transfer through KLIP, providing protected water supply through Mission Bhagiratha, de-siltation through Mission Kakatiya, forest rejuvenation through Haritha Haram, construction of various ARS, modernization of canals, conjunctive use of surface and groundwater, user centred aquifer level groundwater management, tank management, IEC activities etc brought positive changes in water availability in the state more particularly surface water. In order to sustain these efforts, formation of WUA at watershed/village level for agricultural planning, change in cropping pattern from highly intensive paddy to ID crops more particularly from non-command areas, conjunctive use of water, warabandhi (on/off) method of releasing irrigation water, developing intercepting drains, soil treatment, declaring crop holidays, separate electric grids for agriculture and domestic supply, legally separating water and land rights and strict implementation of regulatory measures. The other measures suggested are policy interventions that involve regulatory mechanisms and linking village-based institutions to government departments that manage groundwater etc.

Agriculture plays a pivotal role in the economy of Telangana and the better performance of this sector is vital for inclusive growth. Telangana went in for the Green Revolution in rice cultivation in the 1970s. There have been significant changes in the structure and performance of the agrarian economy in the state in the recent years. Telangana State is endowed with bountiful resources having good soils, diversified cropping pattern and major irrigation systems fed by rivers like Godavari and Krishna. Agriculture is a way of life, a tradition that has shaped the culture and economic life of the people of Telangana. Therefore, it will continue to be central to all strategies for planned socio-economic development of the State. The State Government has emphasized the need to achieve 6% growth rate and increased returns on investment to farmers through improved technology, effective extension reach, efficient input delivery, mechanisation, marketing tie up, adequate credit and crop

insurance. The total Geographical area of the State is 114.84 lakh ha with a Gross Cropped Area of 62.88 lakh ha in the year 2013-14.

1. Total Geographical Area 114.84 Lakh Ha
2. Gross Cropped Area 62.88 3 Lakh Ha
3. Net Cropped Area 49.61 4 Lakh Ha
4. Gross Irrigated Area 31.64 Lakh Ha
5. Net Irrigated Area 22.89 Lakh Ha
6. No. of Farm holdings 55.54 Lakh Nos.
- 7 .Average Farm Holding size 1.12 Ha
8. Average Annual Rainfall 906.00 Mm
9. Cropping Intensity 1.27%
10. Irrigation Intensity 1.38%



Types of Irrigation in Telangana

There are several types of irrigation systems used in Telangana to provide water to crops. Telangana uses a combination of these irrigation methods to cater to the diverse agricultural needs of the state. The government has implemented various projects to improve irrigation infrastructure, conserve water, and increase the irrigation potential of the state. Here are some of the most common types of irrigation methods used in the state:

Surface Irrigation: This is the most common type of irrigation in Telangana, where water is applied to the surface of the soil using flood or furrow irrigation. The water is allowed to seep into the soil and reach the roots of the crops.

Drip Irrigation: In this method, water is delivered directly to the roots of the plants through a network of tubes with emitters. This method is suitable for areas with water scarcity, as it conserves water and reduces evaporation losses.

Sprinkler Irrigation: Sprinkler irrigation is a method where water is sprayed over the crops using sprinklers. This method is suitable for areas with high wind speeds and uneven terrain.

Subsurface Irrigation: In this method, water is supplied to the roots of the plants through buried pipes or tiles. The water is released into the soil through small openings in the pipes, allowing the roots to absorb it.

Lift Irrigation: Lift irrigation is a system where water is lifted from a lower level to a higher level using pumps or other lifting devices. This method is commonly used in Telangana to irrigate areas that are situated at a higher elevation.

Tank Irrigation: Tank irrigation is a traditional method of irrigation, where water is stored in tanks and used for irrigation purposes. Mission Kakatiya is a program implemented by the Telangana government to rejuvenate the traditional water bodies in the state.

Objective

The main objective of the present study is to analyse the irrigation and agriculture development in Telangana state.

Significance of the Study

The present paper throws light on the irrigation growth and agricultural development in the Telangana state. The paper also systematically highlights the importance of irrigation in farm sector development. The structural changes in the sources of irrigation and future implications of the ground water levels have also been analysed in the paper.

DATA AND METHODOLOGY

This study is completely based on the secondary sources of data. The secondary data collected from the publications of various organisations viz. the Department of Agriculture and Irrigation(TS), Directorate of Economics & Statistics, Hyderabad, various Socio-Economic outlooks, Statistical yearbooks, Agriculture census; Ministry of Agriculture, Government of India. Growth rates have been used in the analysis part of the study.

ANALYSIS AND DISCUSSION

Outlook for the Agriculture Sector

The comprehensive set of programmes to address different issues faced by the agriculture sector such as integrated pest management, soil testing, farm mechanisation, e-NAM for improving marketing institutions for agricultural produces, purchase of perishable commodities under market intervention schemes, creation of additional godowns, encouraging farmers towards horticultural crops, crop insurance and other schemes are expected to enhance farmers' income. Increasing irrigation facilities is critical for ensuring drought-proofing of agriculture sector. Government gave highest budgetary allocations for the irrigation sector and making all efforts to fast finishing of the projects. Renovation of tanks through the Mission Kakatiya had positive impact on increasing water availability in the State

New achievements in agricultural cultivation, production

With its farmer-friendly initiatives, Telangana is setting new benchmarks in terms of cultivation and agricultural production. The cultivation area has shot up to 2.3 crore acres in 2021-22 against 1.34 crore acres in 2014, while the total paddy production alone escalated from 68 lakh tonnes in 2014-15 to a whopping 2.49 crore tonnes in 2021-22. The total crop production has surpassed 3.5 crore tonnes.

Soon after the State formation, Chief Minister K Chandrashekhar Rao took up agriculture as a priority sector and initiated multiple measures to improve the infrastructure as well as supply of power and irrigation water without any disruption. Further, Rythu Bandhu farm investment support, Rythu Bima farmer life insurance, supply of fertilisers and seeds, have encouraged more farmers to take up agriculture as a serious and remunerative occupation.

In addition to 2.3 crore acres of agricultural cultivation area, the horticultural crops are being cultivated in another 11.5 lakh acres. The cotton cultivation area has increased by 44.7 per cent from 41.83 lakh acres in 2014-15 to 60.53 lakh acres in 2021-22, according to an official statement here.

The State government is procuring the entire paddy crop cultivated by farmers in Telangana. Accordingly, around Rs 1.07 crore have been deposited directly into the bank accounts of farmers to purchase about 6.06 crore tonnes of paddy over the last eight years. Telangana has also been spending nearly Rs 50,000 crore from its annual budget on agriculture and related schemes over the last a few years.

To provide uninterrupted power to farm sector, the State government strengthened the power distribution network with Rs 36,703 crore and has been providing another Rs 10,500 crore every year towards subsidy against power supplied to the farm agriculture sector, officials said.

Under Rythu Bandhu, the State government had deposited around Rs 10,000 per acre to farmers for the last nine phases over five years i.e. a total expenditure of Rs 57,881 crore as investment support to farmers. Further, about 88,963 bereaved families received Rs 5 lakh insurance amount following the demise of farmers covered under Rythu Bima scheme.

Due to increased agricultural activity, the rural economy has been strengthened like never before and the per capita income of people of Telangana has doubled from Rs 1,12,162 in 2014-15 to Rs 2,78,833. The State government took up numerous other initiatives by appointing an agricultural extension officer for every 5,000 acres, to monitor overall agricultural operations in the State, officials said.

Apart from waiving off transport tax on tractors benefiting Rs 273.5 crore to farmers, the government has also improved godown space from 39 lakh tonnes in 2014-15 to 68.28 lakh tonnes in 2021-11, they added.

Crop Coverage & Production Details

Coverage

• Total	Crop	Area:
2013-14:	1,43,49,186	acres
2022-23:	2,08,72,978 acres	
• Paddy	area	sown
2013-14:	4963068	during:
2021-22:	9797785 acres (97% increase)	acres
• Cotton	area	sown
2013-14:	4232403	during:
2021-22:	4668058 acres (10% increase)	acres
• Red	gram	area
2013-14:	651163	sown
2021-22:	777098 acres (19.34% increase)	during:
		acres

Note: The above areas as on 18.5.2022.

Production

• Paddy:		
2013-14:	9933471	MTs
2021-22:	24865662 MTs (150% increase)	
• Cotton:		
2013-14:	4265000	Bales
2021-22:	6397985 Bales (50% increase)	
• Redgram:		
2013-14:	139585	MTs
2021-22:	469016 MTs	

Vanakalam'22 proposed area is 142.34 lakh acres.

Fertilizer Consumption

• Fertilizer		Supplies:
2013-14:	27.99	LMTs.
2021-22:	39.87 LMTs	

- For Vanakalam '23, 23.09 LMTs of fertilizers were allotted.
- Further requested the DoF for operation of new rake point at Gajwel&Yadadri for timely supply of fertilizers at MRPs to farmers.

Subsidy Seed

- During 2013-14: 5.59 Lakh Qtls with a subsidy value of Rs. 76.71 cr.
- During 2021-22: 1.76 lakh Qtls. of Green Manure Seed was distributed with subsidy value of Rs.63.69 Crores benefitting 3,26,927 farmers.
- During 2022-23: Green Manure Seed plan has been prepared to distribute 1.66 lakh qtls for an area of 13.60 lakh acres with subsidy value of Rs. 71.46 Crores benefitting 3.33 lakh farmers.
- For 2023-24, a total quantity of seed available in the state is 22.50 lakh qtls which can cover an area of 182.32 lakh acres.
- In order to improve soil health, it was planned to supply 1.37 Lakh Qtls of Dhaincha, 0.08 Lakh Qtls of Sun hemp and 0.01 Lakh Qtls of Pillipesara green manure seed on subsidy to cover an area of 12.08 lakh acres for Vanakalam 2023.

The new Industrial Policy brought out by the Government of Telangana promises to revolutionise the way industrial sector has been viewed by successive governments in this country. A day is not far when the new Industrial Policy of Telangana will shine as an exemplar among the best in the world. "Innovate in Telangana, Invest in Telangana, Incorporate in Telangana" will become the motto of industrialization in the new State. It is strongly believed that with the new Industrial Policy in place, a growth rate of 4-5% greater than the national growth rate in the Manufacturing Sector can be achieved. The Telangana State Government welcomes industrialists, investors and entrepreneurs to this new State and promises to fulfil their expectations both in letter and in spirit as espoused in the new Industrial Policy.

Conclusion

The structural changes in sources of irrigation have a significant impact on farm economy. Development of irrigation facilities has the positive impact on the State's rural economy particularly farm sector. From the above analysis, it is clear that irrigation has been playing a greater role in the development of the agriculture sector in Telangana state. It is clear that over the period irrigation facilities increased but there is a need to expand more irrigation facilities in future. The emphasis for the research should be to bring the importance of irrigation in agricultural development and also need for the development of irrigation in the State. The strategies implemented by the government should be passed in goal reaching objectives.

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