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TELANGANA AGRICULTURE CHALLENGES AND ISSUES: STUDY

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Abstract

The paper examined the inclusiveness of strategies for increasing farmers' incomes in Telangana over the last two decades by using various government reports and statistical abstracts of the Telangana state. Telangana's agricultural sector is transitioning from cereal-based cropping systems to commercial cropping systems, with a greater contribution from fruits and vegetables and commercial crops like corn and soybean. The commercialization of agriculture resulted in high input-high output-high-risk agriculture, where small and marginal farmers were not able to cope and ultimately ended up in huge debt with higher cost of production. Further, faster farm mechanization in recent years resulted in increased scale economies, with small farmers getting less profit compared to large farmers per unit area. The tenant farmers are especially at risk in the event of yield loss or output price reduction, as they have to pay a tenancy fee of about 30% of the average farm returns, even though their yields are lower than average. The remedy is the livestock sector; now its contribution is equal to the crop sector to gross state domestic product. If an average agricultural household wants to cross the poverty line, it has to have 4.41 hectares of land in Telangana.

Keywords: Agriculture, Kharif Season Crop, Rabbi Season Crop, Rice, Cotton, Etc.

Introduction

Telangana is the 29th new state of India formed on 13th Feb 2014. Even though it is relatively a new state, as a region it has existed a distinct one for hundreds of years. It was the major part of the Nizam Dominion until 1949; it was a separate state by the name of Hyderabad state from 1949 to 56, before it was merged with greater Andhra State to form Andhra Pradesh. The United States of Andhra Pradesh state had formed several written understandings and terms between prominent leaders of the Congress party, called Pedda Manushula Oppandam (Gentlemen's Agreement 1956). The basic spirit behind these terms of the Agreement was based on the non-usurpation of Telangana resources by the people from Coastal Andhra, who were thought to be more advanced, financially and culturally. However, the terms as feared, were disrespected by successive leadership of Andhra, which led to periodic agitations for the bifurcation of to precious state. The separate agitation of 1969 articulated these concerns, which were successfully placated, with some assurances. The perception of growing economic differences, political-social-cultural marginalization of Telangana people, and the neoliberal growth model that was adopted in 1993 led to the feeling that the interests of the Telangana people were adversely affected under the Andhra leadership, and a massive public agitation began since 1997. As a part of this articulation, agricultural development became the center of the discourse.

The problems of Telangana agriculture, beginning with that of mass farmers' suicides since 1997, indebtedness growing out of failing bore wells, hunger deaths during droughts of 2002-04, etc were all attributed to the policy negligence of the Andhra leadership of ruling parties. Thus, this led to the massive agitation which yielded the Telangana state, with the all-party consensus in the Parliament, barring a few. Such a Telangana state will naturally have agricultural development at the focus. This thesis is an effort to understand Telangana agriculture, its structure and nature from the tools of economics. By teasing out the data of the regions, it analyses the structure, cropping pattern, irrigation, and production in major crops for the period 1970-2018. This would be useful to understand the nature of challenges for transforming agriculture in Telangana, which is at the heart of developmental transformation.

Telangana, as a region, is historically an agrarian economy and continues to be from the occupational dimension. Even today, about 55 percent of people depend on it, and 44 percent of the workforce directly depends on it. However, it is also



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noted by several scholars that agriculture in India in general is no longer the sole livelihood provider to the majority rural masses.

Some studies such as Rawal (2017) and Ramanamurthy (2015) suggested that only about 17 percent of the rural labour directly depends exclusively on agriculture, 75 percent of them also derive income from non-farm activities. When read along with the fact that the share of agriculture falls to 18 percent of SGDP may look like the importance of agriculture has fallen. While it is true and natural that the role of agriculture in overall development declines, its substantive and catalytic role in the growth of the non-farm sector continues to be important. What is worrying is the employment elasticities in agriculture have been falling and thereby employment availability in agriculture has been falling. This is not being compensated by a complementary growth in labor productivity, including in Telangana. The total working population in the state is about 143 lakhs and those engaged in agriculture is about 62.9 lakhs. Telangana state is still in Rostow's take-off stage because an agriculture labor force of more than 20% for the drive to maturity stage less than 20% agriculture labor force required. Probably, it is impossible to reach the drive maturity state, since taking 24 percent of labour out of agriculture would mean creating 33 lakh jobs outside the agricultural sector, which does not appear an easy job by any stretch of the imagination.

Table-1,1
Crops in different seasons in Telangana

<u>Agro-Climatic zone</u>	<u>Kharif season Crop</u>	<u>Rabi season Crop</u>
Northern Telangana Zone	Rice, Cotton, Maize, soybean, Red gram, Green gram, Turmeric	Rice, Maize, Jowar, Bangal Gram, Green Gram, Sesame, Ground net, Sunflower
Central Telangana Zone	Rice, Cotton, Maize, soybean, Red gram, Green gram, Sesame	Rice, Maize, Bengal Gram, Green Gram, Black Gram, Ground net, Sunflower
Southern Telangana Zone	Rice, Cotton, Maize, Red gram, Green gram, Castor, Sesame	Rice Maize Ground net, Bengal Gram, Safflower, Sunflower

Significance Source: Estimated

Telangana's Agriculture: past and present

Telangana region has undergone a substantial change in the past 35 years of its agricultural development. A prominent feature of this growth story is a rise in gross sown area, despite a rise in fallows and the diversion of land use to non-farm purposes. Such an increase in gross sown area is contributed by the rise in irrigated land, particularly by well irrigation. The canal and tank irrigation have declined mostly, except that there has been little revival in canal irrigation in the recent past. These changes in land use have also led to changes in cropping patterns. The most prominent change is the rise of rice, cotton, and maize to dominance, as the three-crop combination commands 71 percent of the area sown. Since irrigation is a dominant source, the serious externality of this is the high area, crop, and yield instability. The production rise has two important phases of growth, namely, 1980–94 and 2005–15. The phase in between is marked by relative stagnation. Among these two phases, the first is growth, which is contributed by both area and yield, while the latter is marked by area shift alone. The wild fluctuations in output in these three major crops call for appropriate policy action to protect the farmers. Finally, rice production, which has grown significantly in the past decade, appears to have surpassed domestic demand, making Telangana a rice-surplus state. There appears to be a serious need for a cropping pattern change from this three-crop combination to more diverse crops, particularly crops like fruits and vegetables. Maize crop acreage response depends on lagged area, irrigated area, lagged price, and well-irrigated area, and these elasticities are 1% and 5% significant. Cotton crop area-explained variables have lagged price, yield, and well-irrigated area, and these coefficients of



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elasticities are 1 percent and 5 percent significant. Paddy acreage response independent variables have been fertilizer, rainfall, and lagged area, and these variables' elasticities are statistically significant at a one percent significant level.

The net sown area has marginally declined in growth rates; what has significantly increased is the area put to non-agricultural use. What a decline in forest area and cultivable waste! What is interesting is that while other fallows declined, current fallows have declined significantly; this could be due to the expansion of bore well irrigation. The total cropped area has increased from 42.75 percent in 1980–81 to 47.43 percent of total land in 2014–15. Such 4.6 percent of land is perhaps a massive growth in area cultivated, thanks to irrigation facilities. The areas sown more than once have tripled over these years. But the other fallows and current fallows together constitute about 17 percent, which would cause tremendous instability in area cultivated and production. Such expansion of area also seemed to have come at some expense to common lands, which often exist under the name of barren and uncultivable waste. And forest land is also gone by 2 percent. These are the lands that the government allowed weaker sections to occupy and cultivate.

The three major sources of irrigation in the state are well, tank, and canal irrigation in Telangana, an issue that remained at the heart of the formation of the new state. Out of the total 43.7 lakh hectares of net sown area, the total irrigated area formed about 14.43 lakh hectares in 2014–15, which is about 33.02 percent. Out of this, the lion's share of 84 percent of irrigated area is irrigated through wells, while 9.61 percent is irrigated by canals and 4.47 percent is covered by tanks. The overwhelming share of well irrigation, which is mostly done by bore wells, reflects the burden of private investment compared to the declining public investment reflected by decreasing share of canal and tank irrigation

Production of cotton has grown at a compound rate of growth of 13.5 percent during 1980–2015. Maize has grown at a rate of 5.59 percent and paddy at 2.83 percent during the same time. These are quite impressive on the face of it. Much of this growth has come during two periods, namely, 1980–95 and 2005–15. The decade of 1995–05 is somewhat of a lost decade, as far as Telangana agriculture is concerned.

Issues of Agricultural Growth:

We have noted that Indian literature on agricultural development is rich. We make the following four sets of observations: First, the Indian land use pattern had reached its optimum on a net-sown area basis by 1961. India has an arable land area of 66 percent, which is one of the highest in the world. Being a tropical country with ample sunlight, India can have two to three crops. The only constraint is irrigation. Therefore, India increased its irrigation potential to a very large extent, and its percentage of net irrigated area is about 39 percent and its gross irrigated area is 48 percent by canal sources. But the rest is irrigated by bore wells, which in turn depend on rainfall. have shown that there are problems in big dams where gross inefficiencies exist in water utilization. Also, there are differences in productivity along irrigation channels. The siltation and DE capacity are other issues. However, the expansion of big irrigation has enabled India to achieve food security. Probably the next challenge is to conserve the water. The second set of findings is about cropping pattern changes. Studies have shown that there are two phases: in the initial phase, the food crop area has expanded and later decreased in India. This is because, after reaching peak production, further improvements in yields will require less land, and hence the reduction in the second phase of land under food crops did not lead to any fall in output. The non-food commercial crops increased in the latter half. The coarse cereals have given way to finer cereals. This trend probably needs a reversal in the future. Third, the demand side studies have shown that India needs about 280 million tons by 2020, and the production has exactly reached that point. In some states, a perpetual surplus is leading to a fall in the profitability of the crop, which will call for further crop diversification. Telangana is on the brink of a marginal surplus. We need to ascertain the demand-supply situation once again. Fourth, Indian farmers are rational and respond to price signals wherever they can. In the case of food crops, self-sufficiency, and stability factors will determine the supply response, whereas for non-food crops, price factors are more important. There is a need for greater economic intelligence to be supplied to the farmers for production, not to overshoot the demand. The formation of cooperatives perhaps holds some



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answers to such questions. We find that the number of studies on the Telangana region is few. We need to study the agriculture of Telangana and analyze the problems it is facing. What has changed Telangana's cropping patterns in the past three decades? What is its cropping intensity? What are the major principal crops of Telangana, and what should be the future course? This study finds that there is a need to study these aspects.

Problems in Agriculture

Farmers in Telangana may face a variety of problems, including lack of access to credit and markets, inadequate infrastructure and technology, and water scarcity. Additionally, many farmers in the region rely on monsoon rains for irrigation, making them vulnerable to fluctuations in rainfall patterns. Climate change and increasing temperatures can also negatively impact crop yields. Some farmers may also face issues related to land tenure and land rights. The cultivation of crops in Telangana state mostly depends on the amount of rain and bore wells. The bore wells and tube wells are entirely dependent on the availability of groundwater. Although the two great rivers 'Godavari' and 'Krishna' flow through the state of Telangana, the irrigation facilities provided are still improper. The state of Telangana has lost Tank irrigation of around 2.92 lakh hectares till today. Other problems that farmers in Telangana may face include:

- Soil degradation and loss of fertility due to overuse of chemical fertilizers and pesticides
- High input costs and low crop prices, leading to low profitability and income insecurity
- Lack of access to extension services and technical assistance, making it difficult for farmers to adopt new technologies and farming practices
- Pest and disease outbreaks, which can cause significant crop losses
- Competition for water resources with other sectors, such as industry and urban areas
- Lack of storage and transportation infrastructure, making it difficult for farmers to get their produce to market
- High levels of debt, which can result from a combination of low income and high input costs.
- Most of the cultivation depended on rains and bore wells.
- Improper irrigation facilities, although two great rivers (Godavari & Krishna) flowing through the state.
- No proper Minimum Support Price for the end crops.
- Inadequate cold storage facilities.
- Pressure from bankers for repayment of loans.
- Non-usage of modern agricultural practices.
- Erratic distribution of rainfall - Areas are subjected to Drought
- 63% of the crop is rainfed, which is exposed to the hostilities of climate
- 84% of the irrigated area is through bore wells & dug wells.
- Improving water use efficiency
- About 85% of farmers are either marginal or small
- Fragmented Land Holdings 16 C

Growth of Production of Major Crops

As we have seen in the cropping pattern, rice production has gradually replaced all coarse grains and millets in Telangana and became the foremost food crop in the region by 1995–96 itself. Interestingly, that in the past 35 years, the rainfall fell below normal for 14 years, leading to heavy fluctuations in area, yield, and production. Such fluctuations are largest in cotton, followed by maize and rice the overall rice production has increased from 19.52 lakh tons in 1980–81 to 30.26 lakh tons in 1991–92, and a peak of 65.81 lakh tons in 2013–14. The increase in rice production in the last 35 years has particularly gone up in the last phase of 2005–15, largely contributed by the growth of the area under Rabi. A relatively consistent monsoon during this phase has drawn huge swaths of land under paddy. Maize production increased from 6.7 lakh tons in 1980–81 to a peak of 35.12 lakh tons in 2013-14, was the second-biggest crop until 2008–09, and is relegated



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to third. Cotton which became the second-biggest crop, had accelerated growth during 2007–15. Tentatively, we speculate that the moderately poor growth during 1995–05 and the accelerated growth during 2005–15 both produced agrarian crises of different sorts. The first phase was characterized by failure of bore wells, failure of crops, and indebtedness, while the later phase was characterized by a rise in the cost of production, a fall in relative prices, and a rise in indebtedness, except for some price corrections carried out in specific years.

Table1.2: Compound growth rate of Production of Major Crops

Crops	1980-94	1995-2004	2005-15	2016-2021
Rice	1.07	0.22	2.72	1.51
Maize	3.03	1.02	7.5	1,64
Groundnut	2.68	2,4	8.12	1.35
Cotton	7.44	9.46	0.74	11.9
Food grains	0.8	-2,65	0.68	0.58
		Production		
Rice	2.83	2.38	1.71	2.52
maize	5.89	1.79	7.23	3.30
groundnut	0.007	3.6	6.5	2.37
Cotton	13.52	22.9	4.36	11.6
Food grains	2,67	0.912	0.92	2.10
		Yield		
Rice	1.74	2,1	1.04	0.99
maize	2.78	2.8	0.26	1.63
groundnut	2.77	1.2	1.81	3.7
Cotton	5.61	12.2	3.6	0.35
Food grains	3.5	3.6	1.62	2,7

Percent significance Source: Estimated

When examining the compound growth rates during different phases, the estimated growth rates once again convey that the faster phases of all three major crops, namely, rice, cotton, and maize, are 1980–94 and 2005–15 [Table 1.2]. The total food grain production growth rate has grown by 2.67 percent in the past 35 years, during 1980–15, which is a fairly high rate of growth in agriculture that is larger than the national average. This is achieved despite of decline of pulses and coarse grains/millet, but is compensated by the growth of rice, which grew by 2.83 percent. Growth during this phase is supported by not only area shifts but yield growth as well. At the aggregate level, this is achieved by a growth rate of yield that grew at 3.5 percent, even though it lost area at a rate of 0.88 percent. The decade between 1995 and 2004 has been generally bad for all crops because it had five poor monsoon years, except maize and groundnut, which were sustained by an area shift. Otherwise, the area and yield both dropped for rice and cotton. In the last decade, during 2005–15, cotton production rose at an unprecedented annual rate of 11.6 percent, totally contributed by a rise in area of 11.9 percent, despite a yield rate dropping by -0.35 percent. The yield growth for most crops, except groundnut, has been stagnant; the growth rate is sustained by area increase alone. A consistent monsoon trail tends to boost well irrigation, which can tremendously contribute to both the Kharif and Rabi seasons, thus boosting paddy as well as cotton.

Conclusion

The Telangana agricultural sector is transitioning from cereal-based cropping systems to commercial cropping systems, with a larger contribution from fruits and vegetables and commercial crops like cotton and soybean. The commercialization of agriculture resulted in high input-high output-high risk, for which many small and marginal farmers



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are not able to cope and ultimately end up in huge debt with higher costs of production in the agricultural sector. Livestock sector growth is also significant; now its contribution is equal to that of the crop sector to gross state domestic product. Telangana agriculture is dominated by small and marginal farmers, whose income from agriculture and allied activities is meager, which has resulted in most of them shifting to agricultural labour during the past decade. The number of cultivators decreased and agricultural laborers increased in the past, and this change is more pronounced among women. The tenant farmers are especially at risk in the event of yield loss or output price reduction, as they have to pay a tenancy fee of about 30% of the average farm returns, even though their yields are lower than average. Hence, there was an urgent need to address the tenant farmer's problems through institutional innovations and subsidy programs. In the policy front to facilitate this diversification of the agricultural sector, the state government should focus on increasing irrigation facilities and providing veterinary services through livestock. Soil Health Management and conservation of natural resources Empowering the farmers in seed management enables them to acquire good-quality seed Increasing the productivity of crops, improving water use efficiency Making farming a commercial endeavor

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