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Anomalies of Rice Production and Procurement in Telangana

Venkatanarayana Motkuri[#]

Introduction

The Government of Telangana has recently announced its agricultural strategy of regulated farming directing the farmers in the state to cultivate designated crops to meet the type and extent of demand for commodities in the market. It is intended to ensure glut-free market for agricultural commodities produced in the state. Government intends to set the acreage limits to certain crops as well. Rice is the single largest crop that occupied more than one-third of cultivated area in the state and area under the crop has increased remarkably during the last agricultural year. A large part of rice production in the state is procured by the state government or the Food Corporation of India (FCI). Under the regulated farming strategy and directions of the state government, the area under rice cultivation in the state is to be limited to 50 lakh acres, as is till recently. One wonders, whether this policy is to contain the procurement burden that the state government has been bearing.

Telangana has emerged as ninth largest state in India in terms of area under rice cultivation and eighth largest in terms of rice production. It is fourth largest state in respect of rice yield rate, next to Punjab, Andhra Pradesh and Tamil Nadu. However, in terms of rice procurement to Central Pool by Food Corporation of India (FCI) or state government agencies (SGAs) directly from rice producers (farmers) or rice millers through levy, Telangana has emerged as second largest state in India, next to Punjab. But, it is bewildering and what one wonders to understand is that procurement volume of rice in the state is found to be more than the volume of rice produced in the state. In this backdrop this paper carries discussion on anomalies of area under rice cultivation and yield rates along with that of production and procurement.

Area, Production and Yield

In the normal conditions, around 20 lakh hectares (or 50 lakh acres) of area in the state is under rice cultivation till 2018-19. The estimated area under rice cultivation has increased remarkably at 8.4 lakh hectares (or 21 lakh acres) during the last year, i.e. between 2018-19 and 2019-20 (Table 1). As rice cultivation is conspicuously associated with irrigation, one may wonder on increase in such facilities during this period leading to such area increase in rice cultivation in the state.

Undoubtedly, to increase the irrigation facilities, the Government of Telangana since the state formation has taken up 38 major and medium irrigation projects along with Mission Kakatiya for minor irrigation especially the tank irrigation. The Census of minor irrigation sources in Telangana conducted in July 2014 by Irrigation Department, Govt. of Telangana found that the total number of tanks¹ in the state is around 46,531 and irrigation potential created for these sources is about 10.12 lakh hectares. Under Mission Kakatiya, the Irrigation Department has planned to restore all the 46,531 minor irrigation sources in the state in next five years, taking

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¹ It includes tanks constructed and maintained by Departments of Irrigation and Panchayat Raj, Percolation Tanks, Forest Tanks, Private Kuntas, Anicuts and Check dams.

up 20% of the tanks each year. It is largely to stabilise irrigation potential already created under these minor irrigation sources. There has not been any creation of irrigation potentials.

Table 1: Rice Acreage, Production and Yield in Telangana

Indicator: APY	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
Area (in Lakh Hectares)	19.12	14.15	10.46	16.82	19.62	19.32	27.72
Area (in Lakh Acres)	47.81	35.38	26.15	42.05	49.05	48.30	69.30
Production (in LMT)	57.55	44.41	30.47	51.73	62.62	66.68	98.74
Yield (in KGs per Hectare)	3009	3138	2913	3075	3192	3451	3562
Yield (in KGs per Acre)	1204	1255	1165	1230	1277	1381	1425

Note: LMT – Lakh Metric Tonnes

Source: Directorate of Economics and Statistics, Min. of Agriculture, Govt. of India; Socio-Economic Outlook 2020, Govt. of Telangana.

Of the 38 major and medium irrigation projects some of them are partially commissioned and a few are completed during the last five years. One major irrigation project and a flagship large-scale initiative is Kaleswaram Lift Irrigation Scheme (KLIS) with an investment of Rs. 80000 crores aims to create irrigation potential or additional *ayacut* of 7.4 lakh hectares (or 18.3 lakh acres). It is to materialise while lifting 180 TMC of water from river Godavari and with a water conveyance system stretching 1832 kms long and consisting of gravity canals and tunnels along with series of barrages and dams as mid-point water storage reservoirs. The full irrigation potentials of all the projects including KLIS are yet to be materialised. As regards the KLIS, trial runs of lift points at the origin and some in the mid-points have begun in the Kharif 2019-20 and only about 50 TMC of water was said to be lifted from river Godavari. One wonders, if commissioning of all these irrigation projects contributed to an increase of 8.40 lakh hectares of irrigated area under rice cultivation alone, as the estimates indicate. The irrigation potential created under these projects is not only meant for rice cultivation but also for cultivation of many other crops with irrigation facilities.

Moreover, there is a discernable conspicuous increase in the yield rate of rice in the state during the last three years (since 2017-18). The production of paddy in the state is in the range of 50 to 60 lakh metric tonnes depending on the rainfall of the year. The rice produced in Telangana state increased by 6.4 percent in 2018-19 over the previous year, despite a decline in area under rice cultivation during the same period due to increase in yield rate. For the last agricultural year (2019-20) as well although there is a remarkable increase in area, the increase in volume of rice production is even higher by five percentage points owing to increase in yield rate. One may surmise that on any technological breakthrough in rice cultivation for such sudden increase in its yield rate during the last three years.

Yield rates depends on seed, soil fertility, cultivation practices and inputs. Rice cultivation in the state is largely based on conventional management practices (CMPs). System of Rice Intensification (SRI) which is said to be yield increasing practice, was practiced sporadically (Gathorne- Hardy *et al.*, 2013 and 2016; Reddy and Motkuri, 2013) for some time and now receded to negligible level. Usage of composting and/or farmyard manure (FYM) is considered to be more yield fetching and sustainable over the chemical fertilisers. But the production and availability of such inputs are not abundant. However, there is a possibility of

yield increase due to changes in seed selection, if any new high yielding variety (HYV) of paddy are sown/ transplanting in the state. Further, increased yield is also possible with the conversion of fertile virgin land or those under other crops to rice cultivation. Also, the increase in acreage or share of rabi over khariff may increase the average yield (of khariff and rabi) as usually the rabi rice yield rate is much higher than khariff rice, even for the same variety.

Available data suggests there has not been any such drastic increase in the area under rice cultivation for rabi season in the state during the last three years. While an increase in yield rate is desirable and commendable, it is not clear so far, what are the factors that contributed to such an increase. It is important to understand if there are any significant changes in the eco-system of rice cultivation that made increased rice yield possible. Deeper examination of the eco system consists of seed varieties, rainfall, climatic conditions, soil health and fertility, cultivation practices and other inputs in the state, offers answers to this puzzle of increased yield rate.

Production and Procurement

The volume of rice production in state is almost double to that of its consumption, hence huge surplus production. At producer level, farmers use part of the production for seed and/or consumption purposes, and keep rest for sale in the market depending on the category of farmers (marginal to large) and size of land under rice cultivation. At the state level, a part of the rice/paddy production in the state is for consumption locally within the state, i.e. producers' own consumption along with that procured and distributed within the state under TPDS and market sales within the state. While part of rice produced in the state is being exported, part of local consumption is met through import from other states or countries.

According to FAOStat, rice consumption per capita in India was 103 kg in 2017. It is 260 kg in Bangladesh, 126 kg in China, 18 kg in Pakistan and 164 kg in Sri Lanka. In terms of rice consumption per capita, India has been ranked 24th among the 155 countries which consume rice. Telugu states, Andhra Pradesh and Telangana, are one of the largest states in terms of per capita rice consumption in India next to Odisha and West Bengal (Giri, 2006).

Table 2: Rice Consumption Estimate for Telangana

Scenarios	Per Capita Rice Consumption		Total Rice Consumption (LMT) in Telangana		PDS Off-take (LMT) 2018-19	Own Consumption or Import (LMT)	Population (in Cr)
	Per Day (Gms)	Per Year (Kgs)	Per Day	Per Year			
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
Scenario I	200	73.0	0.074	27.0	13.2	13.8	3.7
Scenario II	250	91.3	0.093	33.8	13.2	20.6	3.7
Scenario III	300	109.5	0.111	40.5	13.2	27.3	3.7

Note: Gms – Grams; Kgs – KiloGrams; LMT – Lakh Metric Tonnes.

Source: Calculated based on FAO estimate and FCI data along with Population Projections of RGI.

Estimates under three likely scenarios indicate that rice consumption in the state, given its total population at 3.7 crore, is in the range of 27 to 40 lakh metric tonnes (Table 2). A part of rice quantity consumed in the state is distributed through public distribution system (PDS). For the

year 2018-19, PDS off-take in the state is 13.2 lakh metric tonnes which is definitely procured within state. The rest of the consumption requirement in the state is met through rice producers' own consumption and through market purchase of local rice (i.e. produced within the state) or imported one from other states or countries!

Table 3: Procurement of Rice (LMT) in Telangana

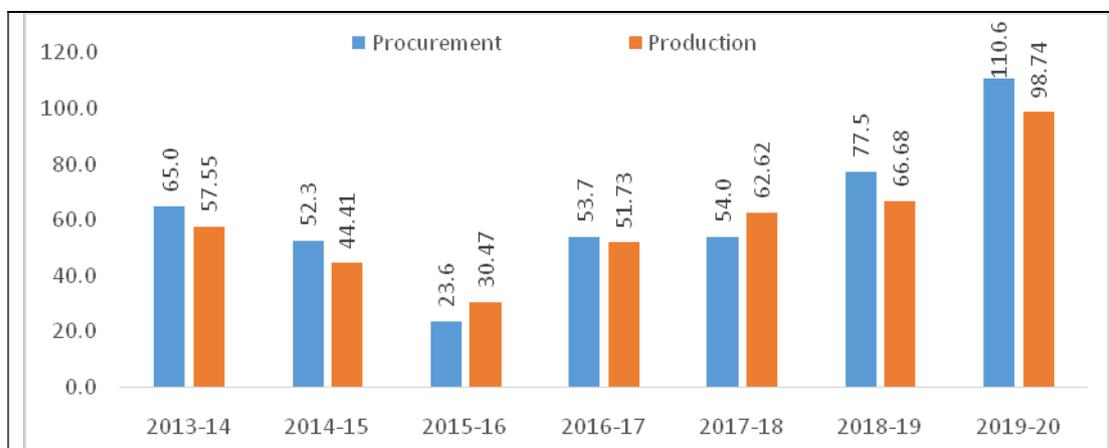
State	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
Telangana	43.53	35.04	15.79	35.96	36.18	51.90	74.11
All India	318.45	320.40	342.18	381.06	381.85	443.99	493.26
% of Telangana	13.7	10.9	4.6	9.4	9.5	11.7	15.0

Note: 1. LMT - Lakh Metric Tonnes; 2. Procurement Data is provided for two different forms Rice (after milling) and Paddy (before milling). But generally Procurement is quantified with volume of rice after milling and received from Miller (as Custom Milled Rice or Levy Rice), Rice to paddy conversion rate used in procurement statistics is 67%.

Source: Ministry of Consumer Affairs, Food and Public Distribution, Govt. of India; IndiaStat.com

A large part of production in the rice producing states in India reaches to Central Pool of rice procurement. Such procurement is made by paying minimum support price (MSP) derived by the Government of India based on cost of cultivation surveys. As mentioned above, Telangana is the second largest contributor to Central Pool of Rice procurement. The state contributes to around 10 percent of total rice procured in the country (Table 3). Last year (2019-20), the state contribution has increased to 15 percent of total volume of rice procured at the national level.

Figure 1: Production and Procurement (in LMT) of Paddy in Telangana



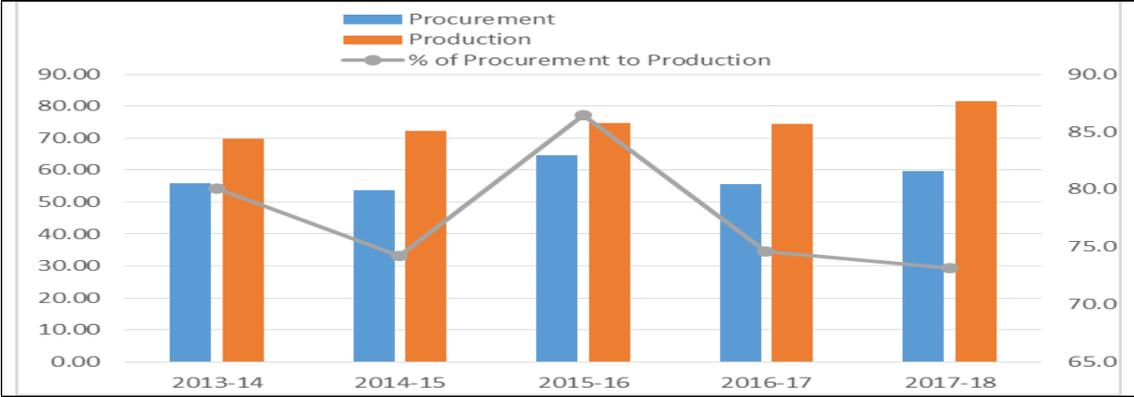
Note: Rice procured as presented in Table 2 is converted into Paddy at the conversion rate 67% of Rice to Paddy; LMT – Lakh Metric Tonnes.

Source: As Table 1 and 2.

Notwithstanding that the obvious abnormality in the state is that volume of paddy procurement is higher than the volume of paddy production (Figure 1). Such abnormality is present in five out of last seven years, since the state formation. Although update for last two years not available, one can observe the contrasting normalcy for Andhra Pradesh (Figure 2). On must, however, note that in the rice/paddy production statistics, of respective States' Directorates/Bureaus of Economics and Statistics or that of Ministry of Agriculture (Government of India), it is generally recorded in volume of paddy production although the

leading head item of the crop is ‘Rice’. It is to say, in the production statistics it is paddy, in other word rice before milling. In the procurement statistics of Food Corporation of India (FCI) records the volume of Rice (after milling) procured. Conversion rate of 67% (rice to paddy) is used to get volume as paddy. Therefore, one must note such difference in statistics and make adjustment accordingly while comparing the volume of rice production and procurement.

Figure 2: Production and Procurement (in LMT) of Paddy in Andhra Pradesh



Notes: Rice procured as presented in Table 2 is converted into Paddy at the conversion rate 67% of Rice to Paddy; LMT – Lakh Metric Tonnes.

Source: As Table 1 and 2.

Is the anomaly observed in Telangana because of under-estimation of yield rate, if any, in **Crop Estimation Surveys** conducted by its **Directorate of Economics and Statistics**? The survey is meant to obtain the estimates of average yield per hectare (productivity) and total production of principal crops, by conducting crop cutting experiments. The under-estimates of yield in these surveys presents under-estimate for the total production in the state, given the area under rice cultivation. Further, there may be under-reporting of area under rice cultivation itself. However, as discussed above, the yield rates of rice in the state during the last three years has shown a conspicuous increase. Under-reporting of area under rice cultivation, if any, is not a peculiar practice to the recent past.

Beyond these imaginably possible under-estimate of production and under-reporting of cultivated area, certain anomalies might lie in rice procurement in itself. Food Corporation of India (FCI) at Central level and State Governments and State Government Agencies (SGAs) at State level carries out the procurement operations of paddy/ rice as an integral part of the food grains management operations. As per Government of India Procurement Policy, Central Pool paddy is procured by various agencies namely, FCI, SGAs and private rice millers. State Governments under Decentralised Procurement (DCP) scheme are allowed to procure Paddy for the Central Pool. Under the DCP, States procure, store and directly distribute food grains towards Targeted Public Distribution System (TPDS) and other welfare schemes. FCI takes surplus over requirements of the state to the Central Pool and meets the shortfall in procurement against allocation for the distribution to TPDS in the state.

How the monitoring and review mechanism for procurement of paddy, storage, milling and up to the stage of delivery of rice was adequate and effectively operationalized. Comptroller

Auditor General (CAG) of India Report in 2015 indicated that paddy procured for Custom Milling Rice and that through Levy rice from millers valuing crores of rupees was not delivered by millers to FCI/SGAs (Government of India, 2015). Besides, recycling of rice by the Private Millers is also observed. Telangana was one of the states in India that CAG has covered in its study and found to have such irregularities.

Concluding Remarks

Available information on rice yields and procurement in the state poses serious doubts about the basis of the understanding required to make realistic policy changes in agriculture sector of Telangana. One wonders how that procurement volume of rice in the state is found to be more than what the state could produce. It is important to ask whether the proposed agricultural policies are based on realistic understanding of the ground realities of crop yield and extent, issues in procurement strategies, among other critical factors of the eco-system of rice cultivation. In the context of Government of Telangana's recent agricultural strategy of regulated farming that restricts the area under rice cultivation to 50 lakh acres, this paper examined anomalies that require better understanding before embarking on the implementation of policies backed by realistic data of the actual situation on the ground, area under rice cultivation and yield rates along with that of production and procurement in the state. One wonders, whether the proposed restrictions on the acreage of certain crops like rice is to reduce the procurement burden that's become too high for the state government.

* * *

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