AGRICULTURAL MARKETING OF PADDY IN ODISHA

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Keywords:	Abstract
Rice production, *Rice procurement,* *Agricultural Marketing,* *Odisha*	*India is the second largest producer of rice in the world after China. It is grown on about one-fourth of the total cropped area and provides food to about half of the country's population. Rice is the major food of more than 70% of total population. Its distribution in India is eastern coastal plains, West Bengal, Uttar Pradesh, Madhya Pradesh, Jammu and Kashmir, Punjab and Haryana. Two to three crops of rice are raised annually in the deltas of Mahanadi, Godavari, Krishna and Kaveri. Nowadays Punjab and Haryana are known for its cultivation. It depends upon irrigation. Besides, rice is grown on terraced fields of the hills from Kashmir to Assam. This study has attempted to focus on Rice production and procurement in terms of Agricultural marketing in the state Odisha. It has shown the growth rate in rice production and success rate of rice procurement in last 13 years. Apart from it both the rates are compared with each other to show the gap.So, the present study has used Time series analysis of trend fitting by method of least square to verify the differences between the actual and forecasted values between procurement and production of rice. Histogram and line graphs are used for robustness of the study.*

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INTRODUCTION

India is one of the world's largest producers of white rice, accounting for 20% of all world rice production. Rice is India's preeminent crop, and is the staple food of the people of the eastern and southern parts of the country. Production increased from 53.6 million tons in FY 1980 to 74.6 million tons in FY 1990, a 39 % increase over the decade. By FY 1992, rice production had reached 111 million tons, second in the world only to China with its 182 million tons. Since 1950 the increase has been more than 350 %. Most of this increase was the result of an increase in yields; the number of hectares increased only 40 % during this period. India is an agricultural country and one third population depends on the agricultural sector directly or indirectly. Agriculture remains as the main stray of the Indian economy since times immemorial. Indian agriculture contribution to the national gross domestic product (GDP) is about 25 per cent. With food being the crowning need of mankind, much emphasis has been on commercializing agricultural production. For this reason, adequate production and even distribution of food has of late become a high priority global concern. Keeping these points in mind the study aims at studying the production and procurement of rice in the state of Odisha.

OBJECTIVES

The study area is limited to the state Odisha only. The objectives of the study are as follows.

- To identify challenges faced by farmers in Odisha in terms of rice procurement.
- To study the present scenario of rice procurement in the state.
- To suggest measures to overcome marketing inefficiencies in the above mentioned field.

DATA & METHODOLGY

All data used in the present study are secondary in nature. The major sources of information are database of World Bank, O.U.A.T., and C.R.R.I., official website of Odisha State Agricultural Department. Apart from these sources various reportsofDept.of Food and public distribution , Cotton Corporation of India Ltd , Ministry of Agriculture (Govt.of India) ,Economic survey (2010-2011) and NAFED are also referred.

This study has used Time series analysis of trend fitting by least square method to verify the differences between the actual and forecasted rice production in Odisha. The method of Least Square has been adopted to fit the trend line. The two normal equations used are-

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$$\sum Y = na + b\sum X$$

$$\sum XY = a\sum X + b\sum X^2$$

Here "a" refers to the parameter and "b" represents the slope of the equation. On further calculation we found that a=6214.7692 and b=139.0989 for the production of rice in Odisha. Hence using these values the expected production was calculated i.e. $[Y_e]$ and the expected procurement $[Z_e]$ which came out to be 2173.3846 and 356 respectively.

Histogram and line graphs are also used to show the growth rate of rice production and success rate of rice procurement in Odisha along with the result of Time series analysis. Measures of central tendency have also been used to some extent.

CONCEPT OF AGRICULTURAL MARKETING

The term agricultural marketing is composed of two words agriculture and marketing. Agriculture roughly means activities aimed at the use of natural resources for human welfare, and marketing connotes a series of activities involved in moving the goods from the point of production to the point of consumption. Agricultural marketing is mainly the buying and selling of agricultural products. In earlier days when the village economy was more or less self-sufficient the marketing of agricultural products presented no difficulty as the farmer sold his produce to the consumer on a cash or barter basis.

  Marketing of agricultural product is an integral part of agriculture, since an agriculturist is encouraged to make more investment and to increase production. Thus there is an increasing awareness that it is not enough to produce a crop or animal product; it must be marketed as well. The National Commission on Agriculture defined agricultural marketing as a process which starts with a decision to produce a saleable farm commodity and it involves all aspects of market structure of system, both functional and institutional, based on technical and economic considerations and includes pre and post- harvest operations, assembling, grading, storage, transportation and distribution. The Indian council of Agricultural Research defined involvement of three important functions, namely (a) assembling (concentration) (b) preparation for consumption (processing) and (c) distribution.

CHALLENGES IN RICE MARKETING IN ODISHA

Indian system of agricultural marketing suffers from a number of defects. As consequence, the Indian farmer is deprived 'of a fair price for his produce. Farmers in India mostly follow unscientific methods of storing store his products in pits, mud-vessels, "Kutcha"storehouses, etc. that lead to considerable wastage. Approximately 1.5% of the produce gets rotten and becomes unfit for human consumption.Lack of grading and standardization usually prevalent is the one

known as "dara" sales wherein heap of all qualities of produce are sold in one common lot. Thus the farmer producing better qualities is not assured of a better price. Hence there is no incentive to use better seeds and produce better varieties.

Inadequate transport facilities and slow moving transport vehicles cannot be used to carry produce to far-off places and the farmer has to dump his produce in nearby markets even if the price obtained in these markets is considerably low. A study of D.D. Sidhanrevealedthat farmers obtain only about 53% of the price of rice, 31% being the share of middle men (the remaining 16% being the marketing cost). In the case of vegetables its 39%and 34% for fruits. The share of middle- men in the case of vegetables was 29.5% and in the case of fruits was 46.5%.Besides the use of wrong weights and measures in the regulated markets, the farmers are required to pay arhat(pledging charge) to the arhatiyas, "tulaii" (weight charge) for weighing the produce, "palledari" to unload the bullock-carts and for doing other miscellaneous types of allied works, "garda" for impurities in the produce, and a number of other undefined and unspecified charges. Inadequate market information along with biased and manipulated prices put further pressure on farmers.Due to inadequate credit facilities thefarmers are forced to take loans from money lenders, while agreeing to pledge their produce to them at less than market prices. The co-operative marketing societies have generally catered to the needs of the large farmers and the small farmers are left at the mercy of the money lenders.

Developing Rural Economy

The setting up of Central Warehousing Corporation and State Warehousing Corporationhas improved the situation to some extent in India. With a view to tackle the problem of Inadequate market information the government is using the radio and television media to broadcast market prices regularly. The newspapers also keep the farmers posted with the latest changes in prices. The regulation of markets broadcasting of prices by All India Radio, improvements in transport system,etc., have undoubtedly benefited the capitalist farmers, and they are now in a better position to obtain favorable prices for their "market produce" but they have not benefited the small and marginal farmers to any great extent. Formingcooperatives of the small and marginal farmers'enable them to obtain fair prices for their produce. If the farmers join hands and form aco-operative, naturally they will be less prone to exploitation and malpractices. Instead of marketing their produce separately, they will market it together through one agency. This practice will eliminate exploiters and ensure fair prices to both the producers and the consumers. Wherever strong marketing co-operative are operative, they have bargained for and have achieved, better prices for their agricultural produce.

Bulk transport of agricultural produce by the societies is often easier and cheaper. The co-operative marketing societies generally have storage facilities. Thus the farmers can wait for better prices. Also there is no danger to their crop yield from rains, rodents and thefts. they can seek assistance from the government or can even evolve their own grading arrangements thus

facilitating trade. The co-operatives can arrange to obtain data on market prices, demand and supply and other related information from the markets on a regular basis and canplan their activities accordingly. This ensures better returns to the farmers. The present agricultural marketing system of the state is governed by the Odisha State Agricultural Produce Marketing Act, which came into force back in the year 1956. Under the present dispensation there are 65 Regulated Market Committees (RMCs) functioning under the supervision and control of the OSAM Board and the Directorate. A Regulated Market committee (RMC) is a democratically elected body consisting of elected members from different constituencies such as farmers, traders, farmer's cooperatives, local urban bodies etc. Generally the concerned sub-collector or collector, under whose jurisdiction an RMC falls, is nominated as the chairman of the RMCs. Under this a lot of steps have been taken to strengthen the rural development of Odisha.

Krushak Bazar

Under 12 point initiative programme of Chief Minister, Krushak Bazar (Farmers Market) were set up to help farmers to their produce directly to the consumer as like in some other state where call it APNI Mandi, Rayatu Bazar etc.43 krushak bazars ware established in the State at different location under some of the RMCs in the state with basic infrastructure facilities out of which 32 are functional. Steps are being taken to activate all the Krushak Bazar, Department has already advised to all the collectors to make the Krushak Bazars Functional.

Contract Farming

Government of Odisha has created an enabling environment with amending the State APMC Act for a space for Contract farming in the state. Within the Framework work the act, it required that the Contract farming sponsored have to registered with the APMCs/Director Marketing with agreement as prescribed in the amended rules with nominal fees. It is having quick grievance redress mechanism having a quasi judicial power to be enforced as per the provisions of the act.

Market Information

At Present, 91"Agmarknet" nodes have been set up in different RMCs for collection and dissemination of market information .Data on market arrival and price range of different agricultural produce are uploaded in the portal on daily basis so as to provide up to data information on the demand & supply position of different produce and to facilitate price discovery by farmers. The RMCs have engaged data-entry operators for uploading the required data in the net and, for the purpose, incentive of Rs.500/- per month is reimbursed to the RMCs by the Government of India.

Private Marketing/E-Marketing

In order to promote electronic trading of Agricultural produces like Maize, Cotton etc., the state

has entered into a MOU with National Spot Exchange Ltd. (NSEL) in 2009. The NCDEX Spot Exchange has already made a preliminary survey in collaboration with RMC Nawarangapur to explore the possibility of introducing spot trading for Maize in Nawarangapur subdivision of Koraput District of the State.

Market infrastructure & Grading Equipment

There is a full-fledged Grading & Standardization Cell operating in the Directorate of Agricultural Marketing of the State as a permanent scheme funded under the State Plan. Besides, promoting Grading & Standardization, the cell creates awareness conducts training programme, especially for paddy. There is a mobile grading laboratory operated by the Directorate of Agricultural Marketing for the purpose There are 428 Market Yards under 65 RMC's.Most of these Yards are used for Paddy Procurement Programme. Besides there are 1630 PACS involved in Paddy Procurement.RMC's have provided Measuring Grading equipments in these yards and also to PACS. The details are given below. OSAM Board has also issued guidelines for purchase of grading equipments to be used in paddy procurement operation. OSAM Board Order No.411 dt. 05.01.2011 regarding supply, installation and commissioning of different types of grading equipment etc, containing the specifications, names of the suppliers and rates, terms and conditions of supply, installation and commissioning including payment terms, penalty clauses, guaranty / warranty period, annual maintenance contract (AMC) with rates may be strictly followed. The grading equipments not included in the above rate contract of OSAM Board, need to be purchased at the rate contract and the agencies approved by State Level Technical Evaluation Committee (SLTC) of Directorate of Agriculture & Food Production / D.G.S. & D / E.P. & M. The agencies should have valid documents as stated vide clause 29 of Annexure B to the above order of OSAM Board.

ANALYSIS & INTREPRATATION

Paddy is the main agricultural produce of the state. There is an extensive mechanism for procurement of paddy with the network ofRMC market yards and Primary Agricultural Cooperatives Societies (PACS) as temporary market yards. At present, different agenciesapproved by state government are procuring paddy at 425 RMC Market yards and 1630 PACS. The following table shows both production and procurement of rice in Odisha, in last 10 years. Following graphs show the pattern of production,procurement, growth rate of production and success rate of procurement of rice in Odisha for last 13 years.

Graph 1: Rice production vs. Rice procurement from 1999 to 2012.
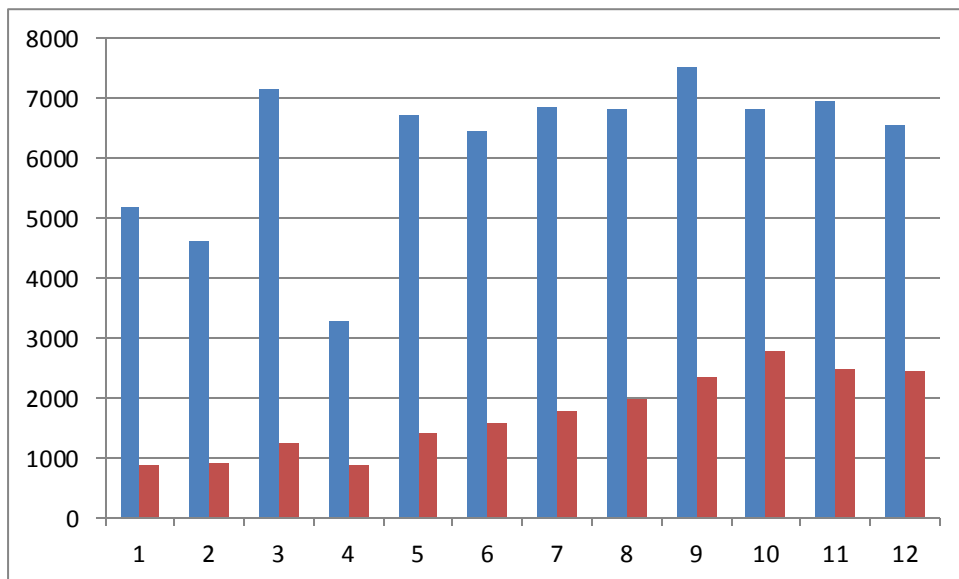
---- Production----- Procurement

Graph 2: The growth rate of Rice production vs. the success rate of rice procurement
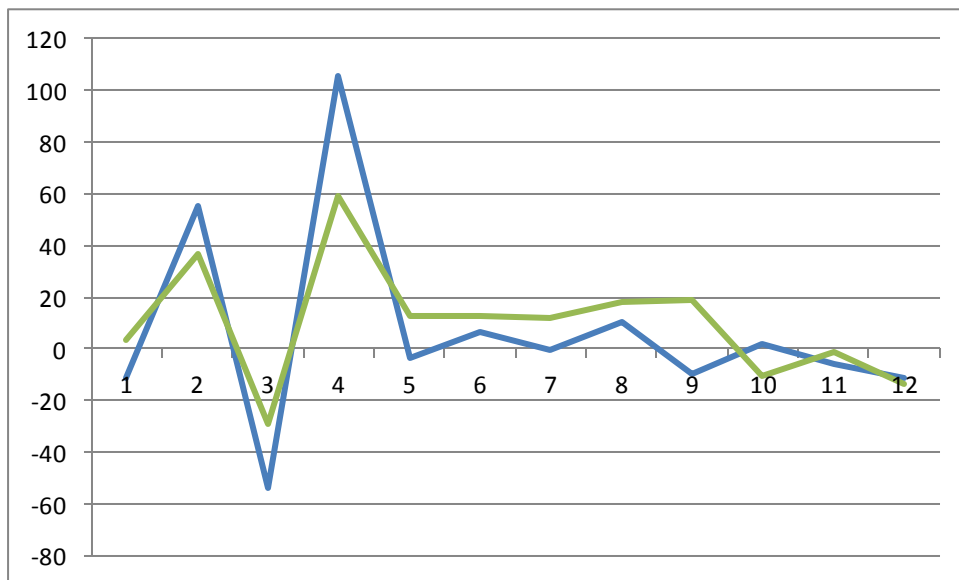
-------- Growth rate of Production--------- Success rate of Procurement

Table 2: Time series analysis using least square method

Year	Production	Procurement	Difference	growth rate of procurement	growth rate of production	Trend value of production	Trend value of procurement
[X]	[Y]	[Z]	[D]=Y-Z	[Zr]	[Yr]	[Y_e]	[Z_e]
1999-2000	5187	887	4300	-0.110468479	-0.110468479	5380.175824	37.38461
1999-2001	4614	918	3696	0.549198093	0.549198093	5519.274725	393.3846
1999-2002	7148	1253	5895	-0.541689983	-0.541689983	5658.373626	749.3846
1999-2003	3276	887	2389	1.055250305	1.055250305	5797.472527	2173.384
1999-2004	6733	1409	5324	-0.039655428	-0.039655428	5936.571429	1461.384
1999-2005	6466	1587	4879	0.060779462	0.060779462	6075.67033	1817.384
1999-2006	6859	1785	5074	-0.005102785	-0.005102785	6214.769231	2173.384
1999-2007	6824	2002	4822	0.104923798	0.104923798	6353.868132	2529.384
1999-2008	7540	2357	5183	-0.096551724	-0.096551724	6492.967033	2885.384
1999-2009	6812	2801	4011	0.021726365	0.021726365	6632.065934	3241.384
1999-2010	6960	2496	4464	-0.057758621	-0.057758621	6771.164835	3597.384
1999-2011	6558	2465	4093	-0.113296737	-0.113296737	6358.868132	3953.384
1999-2012	5815	2136	3679	12.89372313	12.89372313	7049.362637	4309.384
	80792	**22983**	**57809**				

In Quintal.

The average rate of discrepancies in between actual production and actual procurement is:

$$D = \sum D / N$$

$$D = 57809/13 = 4446.84$$

The above table shows the pattern of both production and procurement of rice in Odisha from 1999 to 2011. It follows a fluctuating pattern. Rice production in the year 2008-2009 was highest and in the year 2003-04 was the lowest. During initial years of the study i.e. from 1999 to 2004, the production amount was irregular and very fluctuating. But, 2004-05 onwards the production increased and maintained almost a steady pattern that is above 6500 quintals every year. On the contrary, the procurement pattern shows a steady growth in it. It indicates the distribution of rice in the state is quite satisfactory. In the year 2009-10, the procurement rate was highest and in next year it was a bit lower than the previous year rate. But, overall the pattern of procurement is sound and indicates proper planning in distribution of rice in the state.

The following graphs show the results of time series analysis using least square method for both production and procurement of rice in last 13 years in Odisha.

Graph-3: showing relation between actual production and expected production of rice in Odisha from 1999 to 2012
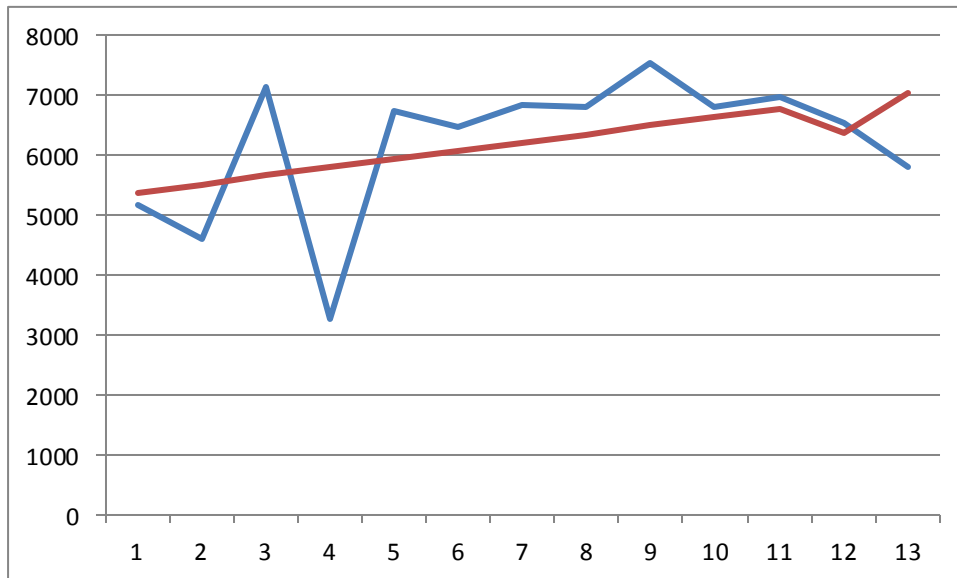
Graph-4: showing relation between actual procurement and expected procurement of rice in odisha from 1999 to 2012
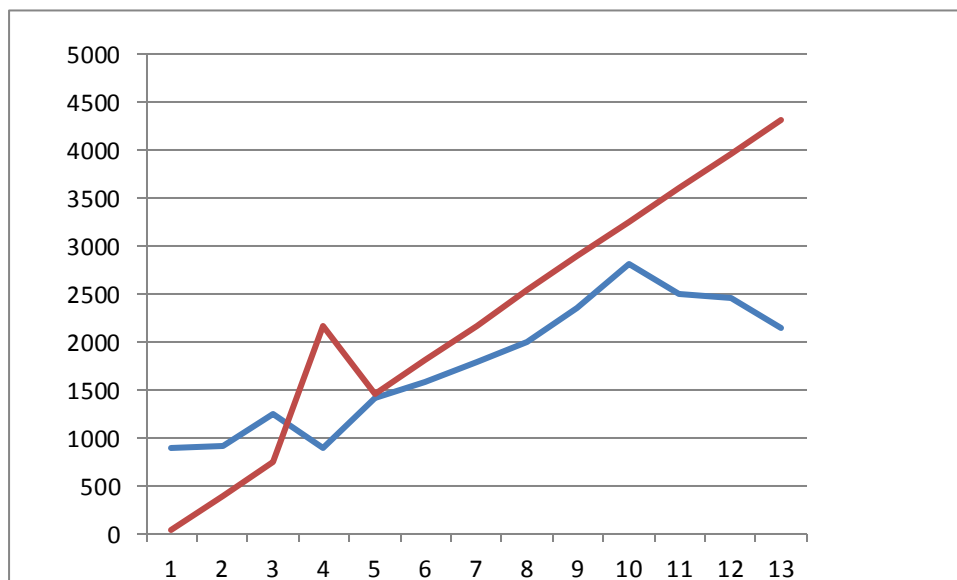
-------- Trend Line   -------- Actual Procurement

For the robustness of the study the above graphs are used. As can be seen from graph 3 for initial 5 years there exists a wide gap between the two values but then onwards relation between actual production and expected production of rice in Odisha appears to be close ultimately the actual value falls short of the calculated value. In case of graph 4 the initial 3 years show higher procurement then anticipated in year 5 the situation is reversed and it continues to remain in the

same fashion i.e. expected procurement to be higher than actual procurement.

SUGGESTIONS

An ideal marketing system is one that maximizes the long run welfare of society. To do this, it must be physically efficient, otherwise the same output could be produced with fewer resources, and it must be electively efficient, otherwise a change in allocation could increase the total welfare and where income distribution is not a consideration. The increasing trend of agricultural production has brought, in its wake, new challenges in terms of finding market for the marketed surplus. There is also a need to respond to the challenges and opportunities, that the global markets offer in the liberalized trade regime. To benefit the farming community from the new global market access opportunities, the internal agricultural marketing system in the country needs to be integrated and strengthened. Government of India is striving to prepare the Indian agricultural markets and marketing environment so as to provide maximum benefit to the producers and in turn, compete with the global markets. Agriculture and agricultural marketing need to be re-oriented to respond to the market needs and consumer preferences. In order to maximize the revenue the farmers need to have the following requirements like accept co-operative marketing societies, proper storing facilities for his goods, adequate have holding capacity, adequate and cheap transport facilities,clear information regarding the market conditions, lower middleman's profit, proper use of standard weights,sell different qualities of products separately, avoid immediate post-harvest sales and sell the produce in regulated markets

CONCLUSION

The present study tried to focus on rice production, its procurement, challenges faced by farmers and major steps to solve the problems. Data is taken from official websites of RBI and FCI. Having analyzed the figures, it was found that the rate of procurement is better than the production of rice in the state. A time series analysis is done for both the production and procurement of rice in last ten years. The result showsthere exists a wide gap between the two values but then onwards relation between actual production and expected production of rice in Odisha. But, expected procurement to be higher than actual procurement. So, it can be safely concluded that in case of procurement of rice, forecasted procurement is higher and we can hope for a favorable future ahead in this case.

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