

A Note on Procurement of Cereals

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Abstract

The path to development and progress of a nation is determined by the availability and access to affordable food. Thus, procuring fine cereals has been an essential component of our development. The Government of India aims to address procurement-related problems by introducing decentralised procurement. This allows a State to procure cereals as per its requirement for distribution to eligible consumers in government schemes. This can benefit farmers in many regions. Decentralised procurement can also reduce the cost involved in production, procurement, and distribution of cereals, lowering Government food subsidies. The digitization of procurement operations ensures that only farmers participate in procurement and only participating farmers' bank accounts are credited with the procurement proceeds. The present study is an effort to evaluate procurement, especially the decentralised procurement of cereals.

Keywords: Procurement; Decentralised Procurement; Minimum Support Price; Farm Harvest Price; Cost of Procurement

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Brajesh Jha¹

Introduction

India has one of the largest food procurement and distribution schemes but is constantly under the scanner. The misuse of public resources² is one strand of criticism (Sharma 2014), while the misutilization of natural resources is another (Jha 2000). Lately, the environmental implication of the long travel of procured grains also become important (Millennium Ecosystem Assessment, MESA, 2005). To address many of these challenges in the procurement of cereals, decentralised procurement was introduced in the late nineties. This allows the states to procure cereals as per their requirement for distribution in different Government schemes. The Government procures cereals from farmers at a Minimum Support Price (MSP), and with the increase of decentralised procurement, the MSP can become a reality in many regions of the country (Jha 2018).

With the enactment of the National Food Security Act (NFSA), the organization of procurement on a sustainable basis becomes important and decentralised procurement of cereals can broaden the base for procurement. Decentralised procurement shortens the distance between procurement and distribution of cereals, thereby reducing the cost of transportation and also the wastage of the items. Unlike the earlier system where production, procurement and storage were concentrated in certain regions, decentralised procurement encourages the creation of post-harvest infrastructure at the local level.³ Banerjee (2011) argues that this has the potential to reduce the costs of organization and distribution of cereals, and may result in the reduction of food subsidies.

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² Government food subsidy varies across years and it accounts for more than 1 percent of the Gross Domestic Product (GDP) of the country.

³ In the earlier system of procurement, the Food Corporation of India (FCI) and similar institutions were procuring from certain regions to meet the objective of food availability at the National level. They were less concerned about diversification of procurement and creation of local infrastructure.

Decentralised procurement reduces the chance of over-procurement as procurement from a farmer has to be supported by his land records and crop plans. Therefore, decentralised procurement is supposed to limit the cost of procurement. Despite so many advantages of decentralised procurement its adoption across states has been slow.

The present study addresses some of the above issues with the following specific objectives:

- To ascertain procurement of cereals and its likely effect on the area and productivity of fine cereals
- To assess the effect of decentralised procurement on the cost of procurement of cereals
- To work out the experiences of farmers with decentralised procurement of cereals.

The first objective is fulfilled on the basis of secondary information from the Directorate of Economics and Statistics, Ministry of Agriculture, Government of India, and similar state-level publications from different states.⁴ For the second objective, the data on procurement and cost of procurement are obtained from the Food Corporation of India (FCI) office in New Delhi. The data on the cost of procurement are the audited financial statements received from FCI. For the third objective, personal interviews of farmers and other stakeholders were conducted with the pre-tested questionnaire in Uttarakhand. Discussions on the result of the above objectives are presented in the next section. The paper finally presents conclusions and policy recommendations in the last section.

2. Results and Discussions

The bulk of the data are from different secondary sources, while the experiences of farmers are based on personal interviews with the pre-tested questionnaire. The results are presented in tables, graphs and simple calculations like growth (average annual growth), and Benefit-Cost ratio. The same is presented separately in the following sub-sections of the present section on results and discussions. The first part of the section discusses procurement, especially decentralised procurement with secondary information. This begins with a discussion on the progress of cereal procurement, the cost of procurement, followed by the effect of procurement on acreage of fine cereals and some disconcerting trends in procurement. The second part of the present section discusses farmers' experiences with the primary information.

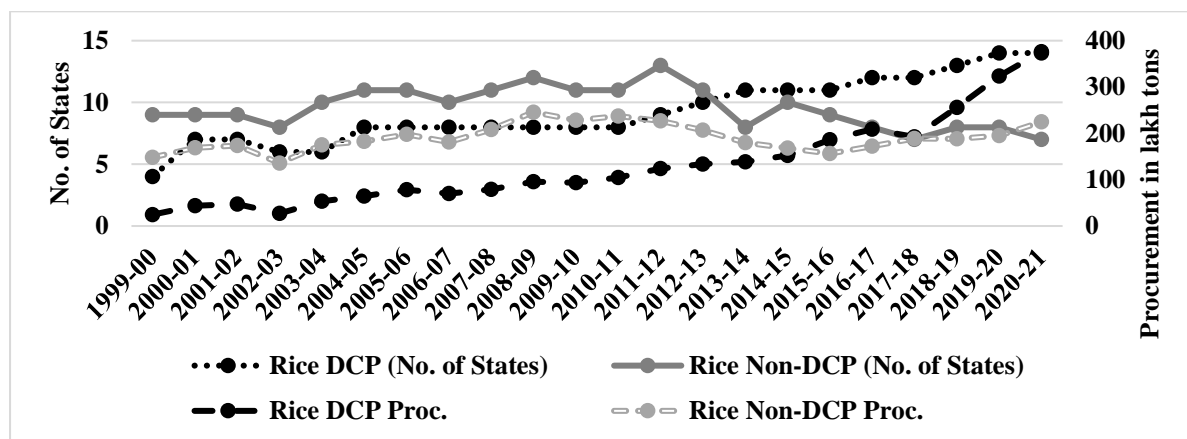
2.1 Procurement of Fine Cereals in recent years

Fine cereals (rice and wheat) are procured using both the procurement systems: decentralised,

⁴ The states chosen for analysis are Andhra Pradesh (AP), Bihar, Chhattisgarh, Madhya Pradesh (MP), Odisha, Punjab, and Uttarakhand. The selection of states is based on various criteria, the advice of the concerned ministry being the most important.

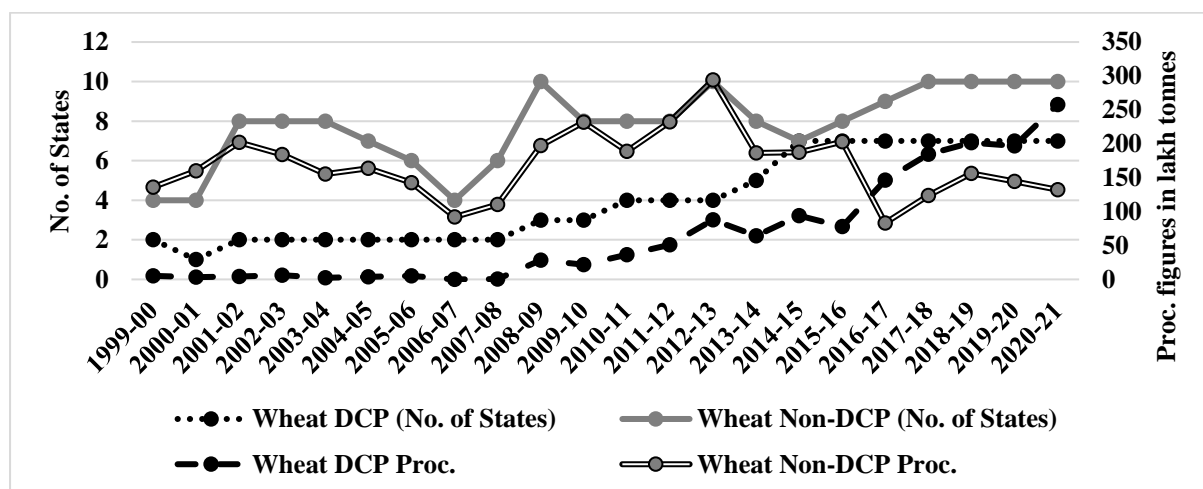
and centralized (non-decentralised). The reference years for analysis of information on procurement are from 1999-2000 to 2020-21. The year (2021) is the most recent year for which we have received data from the office FCI, New Delhi. The progress in alternate procurement systems across states is presented in Figures 1 and 2 for rice and wheat. The figures show that decentralised procurement has increased on both accounts – the quantity of procurement and numbers of adopted states. In case of rice, the number of states which adopted decentralised procurement has increased from four to fourteen, whereas in case of wheat, this has increased from two to seven. Similarly, procurement, especially decentralised procurement, has increased in both commodities during the reference period.

Figure 1: Progress (no. of states and quantity) in the procurement of paddy in either system (decentralised and non-decentralised)



Source: Worked from the secondary sources

Figure 2: Progress (no. of states and quantity) in the procurement of wheat in either system (decentralised and non-decentralised)



Source: Food Corporation of India

The progress of rice procurement is relatively consistent as compared to wheat procurement in

which many extreme peaks and troughs are evident (Fig. 2). Therefore, the progress of procurement (especially decentralised procurement) in wheat presents growth in many short periods. Though decentralised procurement started in the late nineties, its adoption across states was limited till 2014; thereafter, it has grown consistently. The possible reasons behind the trend suggests that 2013-14 is the year the NDA-led BJP government came to power, and government procurement has increased thereafter. This was also the year after the adoption of the National Food Security Act (NFSA)⁵. The course of procurement before the year 2014 changed distinctively in 2004 and 2008. The year 2004 was the end of the NDA-led BJP government which had initiated the decentralised procurement system. The year 2008 was just before the Parliamentary election, and this was also the year of crisis in the international commodity market.

The growth in alternate systems of procurement during the reference period/subperiods has been worked out and the same is presented in the second part of Table 1. This is the annual average growth in percent during the period and sub-periods. The year 2013-14 separates the entire period; therefore, the sub-periods are from 2001-02 to 2013-14, and from 2013-14 to 2020-21. Trend growth during these periods is presented in Table 1.

The annual average growth in periods before and after 2013-14 (Table 1) suggests that decentralised procurement has increased during both periods. The centralized or non-decentralised procurement system declined during the latter period; however, the rate of decline has failed to set off a rate of increase in decentralised procurement. Therefore, procurement (total) has increased significantly during the period. The composition of alternate procurement systems (decentralised and non-decentralised) in total procurement has changed from 1:9 to 1:1 during the earlier and latter periods respectively. The number of states that adopted decentralised procurement has increased, and the extension of MSP-based procurement in non-traditional regions/states has implications for future growth.

The discussions above suggest that decentralised procurement has increased and non-decentralised (centralized) procurement has decreased consistently after the year 2013-14. As a result, procurement has increased significantly; at times, it is more than the requirement of fine cereals for distribution in the country. The decentralised procurement was extended to new regions, some of which were not the traditional growers of wheat or rice.

⁵ The National Food Security Act (NFSA) of 2013 is enforceable, therefore distribution of cereals among the target population is a compulsion for any Government of the day. In such a situation, organisation of procurement on a sustainable basis requires wider base for procurement of cereals.

2.2 Procurement and the Cost of Procurement

The system of procurement of cereals is often condemned as it lacks efficiency in using public money. The same is reflected in the higher subsidies for food. The food subsidy is the difference between the issue price of a commodity and the economic cost that includes all costs in procurement and distribution of cereals.⁶ The data on the cost of procurement and distribution is provided by FCI, New Delhi, and this is the audited financial statement from 2001-02 to 2020-21. The data received are the combined cost of procurement in either system. The cost data provides a further breakdown of economic cost into various components: cost of pooling (MSP with a bonus, if any), procurement incidental, distribution cost, and charges (statutory and non-statutory).

The description of costs and charges follow. The economic cost of procurement and distribution equals Acquisition and Distribution cost, where acquisition cost is the pooled cost of grain and procurement incidentals. The pooled cost of grain is the MSP and bonus, if any, from the states or the Union government. Whereas procurement incidentals consist of statutory and non-statutory charges incurred. The statutory costs are the *mandi* (wholesale market) charge, this also includes the commission to societies for procurement operations. The non-statutory costs include the cost of gunny bags, wages, storage and transportation costs borne by the procurement agencies. The non-statutory charge includes administrative and other charges (guarantee fee, etc.) incurred in procurement and storage operations. The distribution cost is the expenditures incurred in transfer of a commodity from the central/state warehouse (recorded and stored immediately after procurement) to a warehouse of the public distribution system. In brief, the distribution cost includes all charges in transfer of (procured) commodity kept at a place immediately after procurement to distribution warehouse wherefrom the shop keepers (dealers) of PDS offload cereals as per their allocations for distribution to eligible consumers.

Since the economic cost of procurement is the combined cost of procurement from the centralized and decentralised systems, the effect of a decentralised system on the cost of procurement is ascertained by juxtaposing procurement in either system to the combined cost of procurement. In decentralised system, the cost of procurement and distribution is supposed

⁶ The issue price referred above is the price at which a commodity is distributed to the targeted people (beneficiaries) of the scheme. The beneficiaries vary with the scheme, for instance, in Targeted Public Distribution System (TPDS), the persons below poverty line are the beneficiaries (target people).

to be less as it reduces the distance between procurement and distribution of cereals, and involves local (state level) institutions.⁷

With the above impressions, the cost of procurement and distribution is discussed in the present sub-section. The cost of procurement in nominal terms is deflated with the wholesale price index of 2011-12. The deflated cost of wheat and rice procurement for different years are presented in Table 1 and Table 2.

Considering the above rationale for reducing the cost of procurement with the increase of decentralised system, the economic cost of procurement should have come down over the years since decentralised procurement has increased. However, this is not apparent in either Table (Tables 1 and 2). The growth pattern in costs is discussed with the growth in cost components separately for both cereals (wheat and rice).

In case of wheat, a periodic comparison of the cost of procurement between the first (2001-02 and 2013-14) and the second period (2013-14 to 2020-21) shows that the real cost of procurement has increased over the years. This increase in cost is because of an increase in acquisition and distribution costs. A look into the constituents of the acquisition cost suggests that the increase in cost has been more because of an increase in the cost of pooling that includes the MSP of commodity rather than procurement incidentals of wheat. The decline of incidental cost with an increase in decentralised procurement is expected and this suggests efficiency in procurement operation of state-level agencies (if any) in wheat. However, such decline is observed in the first period which is marginal (less than 0.5 percent).

With the involvement of local institutions in procurement and distribution of procured commodities, one may expect an increase in efficiency. However, this is not reflected in the table (Table 1) for wheat. The distribution cost has grown at a rate of almost 4 percent in the latter period (2014-21). Such an increase suggests the inefficiency of the state-level institutions involved in the process of decentralised procurement. The percent of annual average growth is based on trend growth, therefore it is positive during the entire period of reference (2001-22), though at times negative during the sub-periods. The discussions have ignored the figures for these sub-periods.

⁷ Kindly note that in many states which adopted decentralised procurement, different kinds of cooperative institutions have emerged for procurement from farmers, whereas distribution of cereals through Public Distribution System (PDS) has traditionally been the domain of the Civil Supply department of the state.

Table 1: Wheat procurement (in lakh ton) with real costs of procurement and its component (in Rs. per quintal) for the selected period

Year	DCP Total	Non-DCP Total	Cost of pooling	Proc. Incidentals	Acquisition Cost	Distribution Cost	Economic Cost
2001-13 (Avg.)	20.71	182.96	1091.48	242.62	1334.1	286.93	1621.03
2013-21 (Avg.)	152.86	152.14	1326.28	289.01	1615.29	353.46	1968.74
Growth in Procurement and Costs							
2001-21	17.05	-0.64	2	1.15	1.85	1.58	1.8
2001-13	29.07	4.21	1.45	-0.49	1.1	-1.13	0.7
2014-21	16.95	-5.1	3.8	-2.37	2.7	3.98	2.93

Table 2: Rice procurement (in lakh tons) with real costs of procurement and its component (in rupees per quintal) for the selected period

Year	DCP Total	Non-DCP Total	Cost of pooling	Proc. Incidentals	Acquisition Cost	Distribution Cost	Economic Cost
2001-13 (Avg.)	80.85	199.97	1537.56	222.07	1759.63	316.98	2076.61
2013-21 (Avg.)	229.34	184.02	1904.17	446.78	2350.95	445.02	2795.97
Growth in Procurement and Costs							
2001-21	10.37	0.41	1.79	6.91	2.59	2.52	2.58
2001-13	10.31	3.53	-0.63	13.81	1.19	-1.60	0.77
2014-21	14.07	3.63	4.79	-4.48	3.03	4.03	3.19

Note: The real cost in each of the above categories (cost of pooling, incidental, acquisition, distribution and economic costs) is derived from deflating nominal costs with the Wholesale Price Indices (WPI) of 2011. The nominal costs are obtained from the Audited Financial Statements.

Source: Audited Financial Statement from Food Corporation of India, New Delhi

In rice, the real cost of procurement increased by around 15 percent in the second period (2001-2013) over the first period. The cost of acquisition and distribution have also increased by 14 and 17 percent respectively during the reference periods. A look into the constituents of cost component suggests that the increase in the acquisition cost has been more because of procurement incidentals rather than the cost of pooling of rice. The procurement incidentals include the MSP of commodities. The cost of pooling has also increased like other cost components, but the increase in the cost of pooling and distribution suggests an inefficiency of local institutions. This is against the general thinking that increase in the economic cost of procurement has been only on account of an increase in the MSP of rice.

The cost of pooling cereals includes MSP which is more of a political decision. However, the increase in the cost of distribution and procurement incidentals is against the expectation of decentralised procurement. This increase in components of economic cost highlights the inefficiency of the state-level institutions involved in the decentralised procurement of cereals. A categorical statement about the effect of decentralised procurement on the cost of procurement is difficult due to dearth of separate information on the economic cost of procurement. The findings in the above sub-section suggest that the deflated cost of procurement has increased with decentralised procurement. A significant increase in procurement incidentals and distribution cost points towards the inefficiency of the state-level institution, if any are involved in the procurement and distribution of commodities in decentralised procurement.⁸ The growth in the cost of pooling suggests an increase in MSP, especially of wheat.

2.3 The MSP-based Procurement and Extension of Acreage under Rice and Wheat

Development experiences suggest that the MSP kind of assured price for a crop increases the acreage and productivity of the crop, and decentralised procurement encourages a state to procure commodities on MSP. Therefore, the present sub-section attempts to analyze the effect of procurement on the area and productivity of a crop. The first sub-section suggests that decentralised procurement of fine cereals has increased over the years, especially after 2013. Decentralised procurement has also been extended to many states, therefore growth in area and yield of rice and wheat in some states were worked out and presented in the report (Jha 2023). The states considered for analysis of growth in acreage and productivity for rice are Andhra Pradesh (AP), Telangana, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh (MP), Odisha, Punjab, Gujarat, and Rajasthan. In wheat, the states considered are Bihar, Gujarat, Haryana, Punjab, MP, Rajasthan, Uttarakhand, and West Bengal (WB). Since decentralised procurement has increased since 2013, the year 2014-15 was considered as the year of distinction in the entire reference period. The detailed study (Jha 2023) finds that the area under fine cereals (rice and wheat) has grown positively in most of the above states, except Bihar and Jharkhand.⁹ The analysis also finds that the acreage under fine cereals was extended to many non-traditional areas like paddy in Gujarat and Rajasthan, and wheat in Bihar and WB.

⁸ The institution responsible for distribution of procured commodities in most states is the state civil supply department, whereas in some states, distribution as well as procurement is performed by the state level branch of FCI, for example, Jharkhand State Food Corporation in the state of Jharkhand.

⁹ The effect of procurement is not contemplated in some states as procurement of fine cereals in such states has been less, and it is also irregular and unpredictable.

Since the state-wise figures are too aggregate, the present study utilizes the district-level procurement, acreage and productivity data for both the fine cereals. The study analyses the effect of decentralised procurement on acreage and yield (land productivity) of crops (paddy and wheat) in a state. Analyses for a state consider only those districts where procurement has been more than 10 percent of production. This uses district-level information for 2017-18, 2018-19, and 2019-20. The present estimation is based on regressing district-wise procurement figures on the area and productivity of wheat and rice, though such specification requires many variables other than procurement. In that sense, the present estimates are more about the sensitivity of acreage and productivity to the procurement of cereal.

Therefore, procurement of rice in many districts of Bihar, Chhattisgarh, Madhya Pradesh, Odisha, and Punjab are regressed separately on acreage and yield of rice in those districts of the state. Similarly, the procurement of wheat in many districts of MP and Punjab is regressed separately on the area and yield of wheat in those districts of the state. The estimated equations for area and yield in different states are presented in Table 3. The estimates for the area are significant at 1 percent for all the states. The estimated equations suggest that government procurement has led to an increase in acreage under rice and wheat in all the states analyzed. However, the yield of crops has increased in a limited number of states only. The yield of rice has increased significantly in Bihar and Punjab, in two of the five states. Whereas the yield of wheat has increased in Punjab only, in one of the two states analyzed for the same.

Table 3: Sensitivity of area and yield to procurement in fine cereals (rice and wheat)

Regression Equations for Area	t-values	p-values	R-square
Area of rice in Bihar = 46.64 + 0.70*Procurement + e	7.29	0.00	0.36
Area of rice in Odisha = 87.15 + 0.19*Procurement + e	5.82	0.00	0.36
Area of rice in Punjab = 45.73 + 0.12*Procurement + e	9.93	0.00	0.71
Area of rice in Chhattisgarh = 67.64 + 0.25*Procurement + e	7.92	0.00	0.73
Area of rice in Andhra Pradesh = 138.02 + 0.34*Procurement + e	3.9	0.00	0.39
Wheat area in Madhya Pradesh = 146.31 + 0.36*Procurement + e	4.25	0.00	0.27
Area of wheat in Punjab = 38.30 + 0.22*Procurement + e	19.4	0.00	0.89
Regression Equations for Yield	t-values	p-values	R-square
Rice yield in Bihar = 1.66 + 0.01*Procurement + e	6.69	0.00	0.32
Rice yield in Odisha = 2.27 + 0.00009Procurement + e	0.29	0.77	0.0014
Rice yield in Punjab = 3.63 + 0.00046*Procurement + e	3.05	0.00	0.18
Rice yield in Chhattisgarh = 1.56 + 0.0014Procurement + e	2.37	0.03	0.20
Rice yield in Andhra Pradesh = 3.38 + 0.0012209Procurement + e	2.58	0.01	0.13
Wheat Yield in Madhya Pradesh = 3.29 + 0.002Procurement + e	2.7	0.01	0.06
Wheat Yield in Punjab = 4.38 + 0.0011*Procurement + e	5.76	0.00	0.44

Note: Estimates are from secondary information. Asterisk (*) suggests that the asterisked coefficients are significant at one percent. Source: Calculated

The above findings suggest that decentralised procurement has caused a significant increase in acreage under fine cereals in all states for which analyses were conducted. However, procurement has a limited effect on the increase of productivity in rice and wheat crops. The increase in the area disregarding the natural resource endowment of the region affects resource sustainability. The increase in acreage (under fine cereals) with a limited effect on productivity may have large ramifications for development when the gross cropped area is decreasing for the country.

2.4 Emergence of Disconcerting Trends in Decentralised Procurement

Though decentralised procurement allows states to procure cereals as per their requirement for distribution in government schemes, the past data point towards anomalies in the procurement of cereals. In some decentralised procuring states, procurement of fine cereals has been in excess of its requirement for distribution. In another type of the anomaly it was noticed that procurement in some districts has been more than the production of fine cereal in the district. Nevertheless a few states have practiced either kinds of procurement in a year. These are discussed below.

Analysis of data suggests that in some decentralised procurement states, procurement of fine cereals has been more than the requirement for distribution. While in some other decentralised procurement states, the procurement of cereals has been less than the state's requirement for distribution. The example of Bihar and Punjab explains the above contrast with year 2021 as the reference year. In the year 2021, the procurement of wheat in Punjab was 127 lakh tons, while in Bihar it was 0.07 lakh tons. Similarly, in rice, the procurement was 17 and 125 lakh tons for Bihar and Punjab respectively. The above statistics are about procurement of fine cereals. Let us discuss about the requirement of fine cereals in those states for distribution to beneficiaries of Targeted Public Distribution Scheme (T-PDS). With some assumptions mentioned in the footnote, the requirement of cereals for distribution to the T-PDS beneficiaries would have been around 55.27 lakh tons in Bihar during the year 2021.¹⁰ Further distribution of cereals with assumption of 55:45 for rice and wheat in the state would have been around 30.40 and 24.87 lakh tons respectively. In Punjab, the requirement for mandatory distribution

¹⁰ The requirement of cereals for a state has been worked out by ignoring the welfare schemes other than the public distribution. This is calculated on the basis of population below poverty line as available from the Human Development Report of NITI Aayog, Government of India. Following the enactment of National Food Security Act (NFSA), the Union government has to mandatorily provide cereals at a rate of 5 kg a month to people below poverty line. Decentralised procurement encourages a state to procure cereals as per its requirement for distribution to its beneficiaries.

of cereals would have been lower than in Bihar. However, the procurement of fine cereals in Punjab has been more than 250 lakh tons. This has been many times higher than the requirement of the state (Punjab); in fact, the procurement for the year was higher than the requirement of the country for distribution to people in T-PDS.

There are many reasons for such a mismatch in procurement and requirements of fine cereals. The perception of the state government about the role of procurement in development is one, farmers as a pressure group is another.¹¹ The state's preparedness for decentralised procurement is also important as this requires state institutions and local infrastructure, unlike centralized procurement. The practice of decentralised procurement in a state also depends on its willingness to spend some money in advance for procurement.¹²

The cases of over-procurement in a state happens when the support price of a commodity is higher than the market price (Jha and Mohapatra 2004). As of now, procurement from farmers requires them to present their land records and crop plans to support their production. Therefore, procurement of cereals, especially decentralised procurement, has been considered as "close-ended" where the chances of over-procurement (in a district) do not arise. However, Table 4 shows that procurement of rice in some districts of a few states (decentralised procuring) has been higher than the production of paddy. The production and procurement data in Table 4 are for the year 2019-20. The figure in parenthesis with a district (Table 4) is procurement as a percent of production, and a figure over 100 in a district suggests that procurement has been higher than the production of paddy.

In many districts of Punjab, and some districts in Odisha, the procurement of rice has been more than 134 percent of production of paddy. A district with procurement higher than production is not expected in a close-ended decentralised system.¹³ The field visits indicate that higher procurement to production has not happened due to over-procurement from farmers. This has been on account of the state government's agreement (order) that allows rice millers to sell processed rice directly to the civil service department (of the state) responsible for the distribution of cereals. The above example is of Uttarakhand, a cereal deficit state, and on such

¹² A decentralised procuring state has to initially incur some expenditures in procurement operations. Most of these expenditures are reimbursed by the Central government at an agreed rate. The field survey suggests that there is some lag in reimbursement of expenditures, but at times, delay in reimbursement has been significant.

¹³ The data on production and procurement are from different sources (production from DES while procurement from FCI). If figures for production are of paddy and procurement of rice, the study has noted the rate of conversion of paddy into rice (0.66), and consumption needs of farmers (0.10).

a ground, the state officials were defending the “state agreement” with rice millers.¹⁴ The high procurement to production is also reported from many districts of Punjab, a cereal surplus state (Table 4). The effect of over-procurement on food subsidies cannot be exaggerated.¹⁵

To limit procurement in a surplus state, and make decentralised procurement truly “close-ended”, procurement from the rice millers has to be stopped. The present study suggests for a reconsideration of the state order which authorize rice millers to sell directly to the state department responsible for the distribution of cereals.

Table 4: Districts with the state where procurement of rice is higher than production of paddy in the year 2019-20

Punjab (2019-20) (108.76 lakh tons)	Barnala (161.1), Bathinda (153.4), Faridkot (137.4), Fatehgarh Sahib (119.1), Ferozepur (336.9), Gurdaspur (107.6), Hoshiarpur (141.5), Jalandhar (139.1), Kapurthala (153.9), Ludhiana (142.8), Mansa (124.9), Moga (153.8), Muktsar (110.2), Nawanshahr (SBS Nagar) (148.6), Pathankot (101.7), Patiala (133.9), Rupnagar (Ropar) (161.2), Sangrur (133.2), SAS Nagar (Mohali) (148.4), Tarn-Taran (107.9)
Odisha (2019-20) (47.98 lakh tons)	Bargarh (208), Bolangir (88.7), Boudh (101.5), Gajapati (66.3), Jharsuguda (51.2), Kalahandi (111), Nuapada (84.8), Rayagada (70.1), Sambalpur (135.3), Sonepur (119.2)

Source: Directorate of Economics and Statistics (DES), Ministry of Agriculture and Farmers Welfare (GOI) and respective state’s Department of Food, Civil Supplies & Consumer Affairs.

A glance at past data on procurement suggests that many states have adopted the decentralised procurement system and accordingly, the procuring states are either centralized or decentralised. However, a few states in certain years have practiced both kinds of procurement (centralized and decentralised). Figure 3 shows such a trend in states like Punjab and Rajasthan.¹⁶ The states in the following year switched to either decentralised as in Punjab or

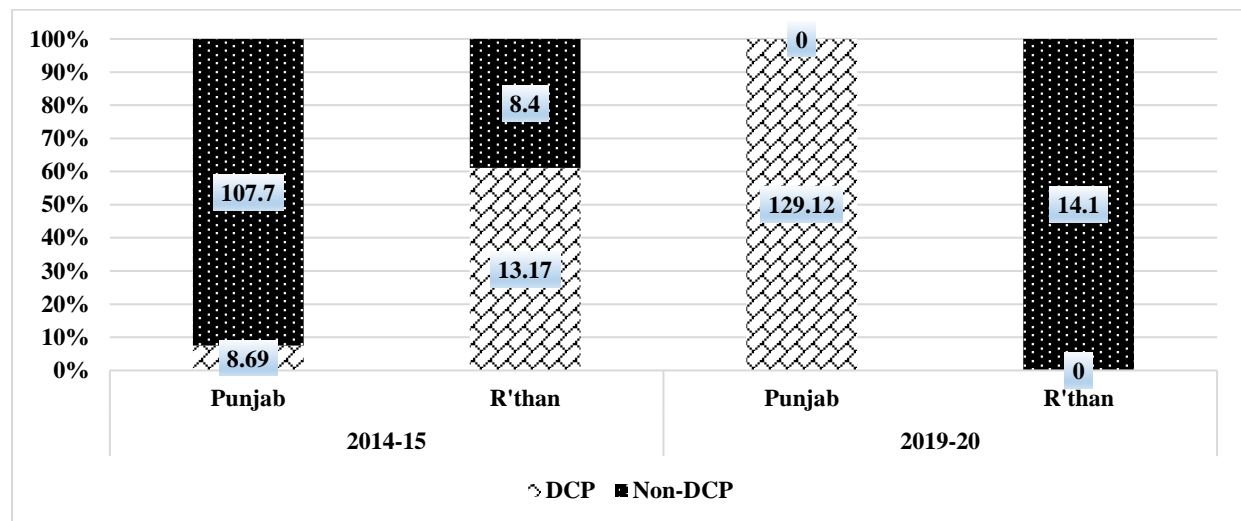
¹⁴ The cereal deficit states are those where requirement of cereal for distribution to beneficiaries through PDS and other welfare schemes are more than procurement of cereal in the state. Uttarakhand is an example of cereal deficit state. Whereas, Punjab is an example of cereal surplus state where the requirement for distribution has been less than the procurement of cereal in the state.

¹⁵ The figures for the year 2021 show that procurement of fine cereals in Punjab has been more than the requirement (distribution and buffer stock) for the state and also of country. Though the selection of year is deliberate, the cereal imbalances has been true for many years.

¹⁶ The districts level procurement figures indicate that in the year 2017 some districts of a few states were practicing centralized procurement while in many other districts of the same state the decentralised method of procurement were being practiced.

centralized as in Rajasthan. The latter example of Rajasthan is incomprehensible as it converted to a centralized procuring state, while the Union government is trying to popularize the decentralised procurement system. An enquiry into such conversion suggests that the decentralised system requires the concerned state department to incur procurement-related expenditures in advance, and the same is reimbursed from the central government as per the agreed rate. The state government officials feel that the delay in such reimbursement restricts them from undertaking the decentralised procurement.¹⁷ The decentralised procurement also expects the state institutions to organize procurement of cereals.

Figure 3: The change in the system of procurement (decentralised and non-decentralised in lakh ton) in the selected years



Source: Worked from the secondary sources

The discussions above point towards some anomalies in the procurement of cereals. In some decentralised procuring states, procurement has no regard for requirement of fine cereals in the state; this is explained with Bihar and Punjab as examples with statistics for the year 2021. The possible reasons for such imbalances across states vary from political economy to infrastructure bottlenecks. Besides over-procurement, the present study also finds that the procurement of rice in some districts of a decentralised procurement state is significantly more than the production of paddy in the district. This is not acceptable in decentralised procurement as farmer's procurement requires him to support his quantity with land records. The investigation

¹⁷ A field visit in Uttarakhand suggests that some charges of a cooperative based procurement centre were not paid for years; otherwise also some officials opined that delay in payment restricts them from opting for decentralised procurement.

suggests that the state government's agreement with rice millers to directly purchase their produce is behind such an anomaly.

2.5 Experiences of Farmers with Procurement of Cereals

This section of the present study assesses the experiences of farmers with decentralised procurement. For farmers, the mode of procurement (decentralised and centralized) is not important. In that sense, this section illustrates the experiences of farmers with the procurement of cereals. Accordingly, a survey was conducted in some procurement states (Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Punjab, and Uttarakhand). And from each of the chosen states, two districts from different regions were selected for the present investigation. Again, from each of the selected district, three procurement centres situated in separate blocks of a district were chosen. Subsequently, villages associated with a procurement centre and beneficiary farmers from the villages were selected randomly.

Though this section is based on a detailed study, it discusses survey results that provide information that is different from the one available in the existing literatures and prevailing findings. This section also presents farmers' opinions on digitization in procurement. Though the survey was conducted in many states, the author visited the state of Uttarakhand. Therefore, at times, this section explains procurement-related phenomena with the instance in Uttarakhand, though information is available for all the analyzed states (Jha 2022).

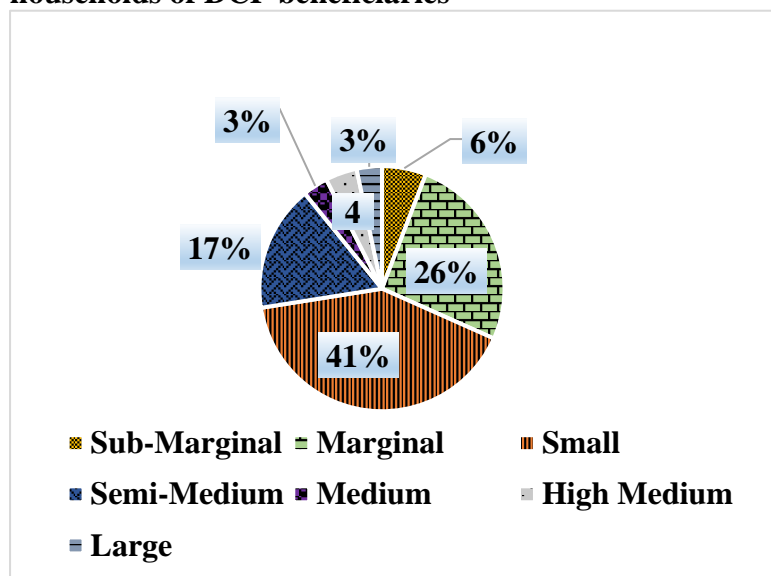
The survey found that the farmers of a village proximal to urban places receive good prices for their produce (cereals) and therefore, they do not require government procurement. The present survey was conducted in regions away from any urban centre, especially the regions with less than 15 percent of urbanization. Fig. 4 shows that a considerable proportion of marginal and small farmers participate in government procurement of cereals. This is against the general belief that big (medium and large) farmers only benefit from government procurement. Though the proportion (among beneficiary farmers) of small and marginal farmers is less than their size-wise distribution in the village, the present survey did not find any discrimination against them (marginal and small farmers) in any of the procurement centres. In fact, a small proportion of marginal farmers and a problem in aggregation of their surplus constrains them from availing facilities in government procurement.

The survey finds that moisture in cereals in excess to permissible levels has been an important deterrence for farmers to bring their produce to the procurement centre. The moisture has become more frequent in recent years, as farmers of all sizes increasingly use combine

(machines) to harvest their crops. The study by Jha (2022) finds that farmers are also aware of the sensitivity of procurement officials to moisture, and farmers take care of the same. Yet a lack of suitable instruments to measure moisture in the cooperative-managed procurement centre of Uttarakhand has encouraged officials to demand cereals over the procured quantity. This has become a point of discontent for farmers in some procurement centres.

In recent years technological intervention has increased in most Government schemes. Though there have been many in decentralised procurement, the present study focuses on two. The first is the digital intervention in registration of farmers which is essential to avail the facility of government procurement. The second digital intervention is about payment to beneficiary farmers through the bank account. Farmers’ opinions on the above aspects of digital interventions are presented in Table 5. The opinions are presented in two groups, the first group comprises small and marginal farmers, while the second group consists of farmers of medium and large sizes.

Figure 4: Land size with their frequency in sample households of DCP beneficiaries



Source: Based on Primary Survey (2022) of Author.

The survey results in Table 5 report the extent of delays in procurement and payment to farmers. The extent of delays for farmers is presented separately for two categories of land-holders. The land-holders in sub-marginal, marginal, and small are grouped in one, whereas the second group comprises different kinds of medium, and a few large farmers in the sample. The delay in procurement happens because of the non-timely registration of farmers. The field visits suggest that the registration of farmers is a necessary step to avail the facility of

government procurement. The registration requires the land detail and crop plans of farmers besides their AADHAR, PAN and bank details. The registration of farmers and the details in it prescribe the quantity of procurement from a farmer, and this is approved by the sub-divisional office after consulting the digital map of the area (BHULEKH). In case the land-related details and crop plans of a farmer do not match with the digital map of the area, the same is sent back to the land-revenue-related official (patwari) for physical verification. This back-and-forth consultation for crop plans and land details frequently delays the registration of farmers and their eligibility for procurement. Table 5 shows that this delay in procurement has been more than 15 days for around one-half of the sample farmers. Such a delay is more from the group of small farmers as their literacy (digital literacy) level has been lower than the group of medium farmers.¹⁸

Table 5: Delay in government procurement and payment to farmers

Perceptions	Land Size	Sub-Marginal, Marginal, Small	Semi-Medium, Medium, High Medium, Large	Average Yes
Delay in government procurement in days	Within 7 days of harvesting	22.63	32.56	27.60
	Within 15 days of harvesting	22.41	19.30	20.85
	Beyond 15 days of harvesting	54.96	48.14	51.55
Delay in receipt of payment in days	Within 3 days	3.65	11.63	7.64
	Within a week	6.46	5.00	5.73
	Within 15 days	53.87	67.91	60.89
	Beyond 15 days	36.02	15.47	25.74

Source: Based on Primary Survey (2022) of author.

Table 5 also indicates the payment status of farmers for procurement of their produce. Most farmers (three-fourths) receive payment in a fortnight, and only one-fourth of sample farmers have received payment after a fortnight of disposal of their produce in the procurement centre. Considering the Central government timeline for payment within three days of disposal of produce, the figures for delay of payment (beyond three days) in Table 5 are on the higher side. The estimated figures in the table suggest that only 7 percent of farmers receive payment within three days of disposal of their produce in the procurement centre. Therefore, the delay in

¹⁸ In rural India, literacy of farmers is often associated with the size of holdings. The literacy also influences digital literacy of farmers, therefore the delay in payment. Jha (2022) discusses the same.

payment of more than seven days for the majority of beneficiary farmers is difficult to understand. The field survey also observed that a limited amount of procurement happens directly on the premises of the state warehouse; and in such cases only farmers get payment within a few (three) days of disposal of their produce.

The majority of procurement at least in Uttarakhand is undertaken by the cooperative-managed procurement centres, and most of these centres are away from the state warehouse. In such procurement centres, the concerned official deposits the procured items to the state warehouse after 4-5 days of procurement. The process of payment (to farmers) starts only after it is recorded in the state warehouse. The frequency of procured cereals that reach the state warehouse depends on a number of issues like capacity of the warehouse associated with the procurement centre, the amount of procurement, and the cost of transportation from local to the state warehouse. Therefore, the survey result shows that the majority of farmers receive payment within 15 days of disposal of their produce in the procurement centre. Some farmers report a delay in payment of more than 15 days, and this is because of inadequate linkages of farmers' bank account. The survey did observe that farmers are exaggerating their problems with procurement.

3. Conclusions and Policy Recommendations

The discussions above indicate that procurement, especially decentralised procurement of cereals, has increased after the year 2013-14. In such an initiative Government procures cereals at the MSP and prevalence of MSP for a commodity increases acreage under the same. The study argues that an undesired increase of acreage under fine cereals may have both kinds of development problems supply and demand-related. The increase of acreage under fine cereals without any regard to resource status harms sustainable use of resources in the region. The increase of acreage under fine cereals without a significant increase in productivity (of the same) will affect acreage of competing crops like coarse cereals, millets, pulses, oilseeds, fruits and vegetables, especially when the net-sown area in agriculture has been decreasing.

Farmers' decision to produce fine cereals over other crops is due to the prevalence of MSP in that region. Therefore, any encouragement to produce crops other than fine cereals requires an assured price for the commodity; and the study recommends for legalization of MSP for most of commodities (24) for whom MSP is announced.

In decentralised procurement, a reduction in the cost of procurement and distribution is expected as the supply chain shortens, and local institutions are involved in the process of procurement. However, this is not evident with the real cost of procurement in the present

study. The component-wise details of the economic costs of procurement show significant increase in procurement incidentals and cost of distribution. The increase in the cost-components, to some extent highlight that the state-level institutions which is responsible for procurement and distribution of cereals (in the decentralised system) are not more cost-efficient than the earlier arrangement.

The procurement of fine cereals higher than the requirement (for the country) has adverse effects on the costs. Since decentralised procurement is a close-ended scheme, any encouragement to limit procurement is expected to reduce the economic cost of procurement. However, in some districts procurement of paddy has been more than the production of rice owing to the state order which allows purchase of rice (processed) from rice millers. Such a state order which allows procurement from rice millers of any states needs to be relooked, especially in a cereal surplus state (Punjab).

The study finds that farmers of villages proximate to the urban place do not require government procurement. The market price higher than the MSP is influenced by developmental variables like urbanization. The market price of fine cereals is also influenced by their issue price in different public distribution schemes of government, and the numbers of beneficiaries in the region. The competitive politics between state and central governments at times influences the issue price of a commodity. However, an agreement between governments on the issue price of cereals can help in the prevalence of reasonable market price of the same. This requires consensus between state and central governments.

The present study in contrast to the earlier findings suggests that landholders of all sizes including small and marginal farmers are availing facilities of government procurement. Technological intervention like digitization has made the process of procurement more transparent. The digitization of payment has made possible to credit the bank account of participating farmers within days of disposal of produce in a government designated procurement centre. The digital registration of farmers for availing the facilities of government procurement removes the chance of exclusion of farmers (willing for procurement) and inclusion of non-farmers (traders). The problems with digitization will improve with an increase in literacy, especially the digital literacy of farmers. An upgrade of a digital app like BHULEKH which is used to compare land details and crop plans of farmers in Uttarakhand may reduce delay in procurement. With some of the above improvements, the benefits of decentralised procurement of cereals can be realized more emphatically.

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Appendix Notes and Tables

I. Decentralised Procurement of Cereals (DCP)

The Union government under the DCP allows states to procure cereals as per their requirement in distribution to beneficiaries of different schemes like Targeted Public Distribution System (TPDS), Mid-day meal scheme for school children, Integrated Child Development Scheme for children below six years of age, Annapurna Anna Yojana for Adolescent Girls, and similar Other Welfare Schemes (OWS). The decentralised procurement is a close-ended scheme wherein the upper limit of procurement from farmers is decided on the basis of their land records, and crop plan for the relevant year. The registration of farmers besides the above land-related details also includes their AADHAR, PAN and bank account (wherein proceeds will be transferred through NFSM).

Following the adoption of the DCP, if cereal procured (purchased from farmers) in a state is more than the state's requirement for distribution (in various schemes), the state can transfer excess cereal to central food procurement agencies like the Food Corporation of India (FCI). Such transfer happens at MSP with storage and handling charges at a predetermined rate. In the decentralised system, procurement has to be undertaken by the State government department and its agencies, but the state departments frequently take the help of FCI in procurement, handling, and storage of food grains.

II. The Costs associated with Procurement of a Commodity

The cost details as provided by FCI, New Delhi, the Economic Cost equals Acquisition Cost and Distribution Cost where Acquisition Cost is the Pooled Cost of Grain and Procurement Incidentals. Pooled Cost of Grain is the MSP and some bonus (if, any) from the state or central government, whereas Procurement Incidentals consist of Statutory and Non-Statutory costs. Statutory costs are the Mandi charges; this also includes *Arhatias*' commission or commission to societies. Non-statutory costs include the cost of gunny bags and charges for labour, storage and transportation borne by the state agencies. The non-statutory charge also includes the Administrative and other charges (guarantee fee, etc.). Distribution Cost is all the expenditure during the transfer of a commodity from the central / state warehouse (stored after procurement) to the warehouse for Public Distribution programmes. In brief, distribution cost includes all charges in operation of carrying a commodity from FCI to PDS warehouse.

Source: Audited Financial Statement from Food Corporation of India, Delhi

Appendix Table 1: Wheat Procurement (in lakh ton) with Real Costs of Procurement and its Components (in rupees per quintal) from 2001 to 2021

Year	DCP Total	Non- DCP Total	Cost of pooling	Proc. Incidentals	Acquisition Cost	Distribution Cost	Economic Cost
2001-02	4.34	201.96	1072.57	244.17	1316.74	229.61	1546.35
2002-03	6.07	184.17	1053.42	241.29	1294.71	255.11	1549.82
2003-04	2.55	155.46	1015.45	229.76	1245.2	282.11	1527.31
2004-05	4.03	163.92	957.81	285.31	1243.12	347.86	1590.98
2005-06	5.24	142.62	950.66	255.86	1206.52	350.52	1557.04
2006-07	0.00	92.25	1021.15	252.6	1273.75	377.68	1651.43
2007-08	0.59	110.69	1209.23	219.57	1428.8	327.21	1756.01
2008-09	28.37	197.35	1183.85	222.54	1406.38	304.06	1710.44
2009-10	21.88	231.94	1214.28	246.92	1461.21	239.15	1700.36
2010-11	36.34	188.79	1159.45	231.36	1390.81	237.1	1627.92
2011-12	51.12	232.22	1119.18	235.68	1354.86	240.39	1595.25
2012-13	88.04	294.11	1140.7	246.35	1387.05	252.39	1639.45
2013-14	64.17	186.55	1129.88	254.59	1384.46	311.82	1696.28
2014-15	93.77	187.54	1157	304.28	1461.27	339.64	1800.91
2015-16	77.77	203.11	1281.81	334.62	1616.44	322.84	1939.28
2016-17	146.43	83.18	1314.96	329.09	1644.04	324.58	1968.62
2017-18	184.4	123.84	1381.98	264.5	1646.48	353.45	1999.93
2018-19	201.7	156.25	1399.02	234.44	1633.46	336.27	1969.72
2019-20	196.87	144.45	1446.26	290.25	1736.51	463.78	2200.29
2020-21	257.76	132.16	1499.34	300.3	1799.64	375.28	2174.91

Appendix Table 2: Rice Procurement (DCP and non-DCP in lakh tons), with Real Costs of Procurement and its Component (in rupees per quintal) from 2001 to 2021

Year	DCP Total	Non-DCP Total	Cost of pooling	Proc. Incidentals	Acquisition Cost	Distribution Cost	Economic Cost
2001-02	47.09	173.67	1652.57	121.12	1773.7	216.87	1990.56
2002-03	27.16	135.89	1657.88	108.12	1766	276.51	2042.51
2003-04	53.76	175.2	1647.34	51.01	1698.35	356.64	2054.98
2004-05	64.26	182.46	1543.5	91.3	1634.81	400.49	2035.3
2005-06	78.00	197.78	1536.64	58.46	1595.11	407.06	2002.16
2006-07	70.08	180.99	1273.07	271.54	1544.61	406.04	1950.65
2007-08	79.01	208.35	1388.38	287.7	1676.08	398.69	2074.76
2008-09	95.33	245.71	1527.72	281.08	1808.8	347.84	2156.64
2009-10	93.76	228.33	1607.19	344.46	1951.65	220.71	2172.37
2010-11	104.46	237.52	1575.82	341.07	1916.9	243.47	2160.36
2011-12	123.63	226.97	1512.2	350	1862.2	260.74	2122.94
2012-13	133.62	206.82	1528.37	358.99	1887.36	268.74	2156.1
2013-14	138.76	179.69	1566.23	412.03	1978.26	346.64	2324.9
2014-15	152.58	167.82	1625.5	522.14	2147.64	436.72	2584.35
2015-16	185.95	156.23	1826.86	563.51	2390.36	458.74	2849.11
2016-17	209.10	171.96	1859.46	535.13	2394.6	387.63	2782.22

2017-18	192.63	189.11	1993.93	419.1	2413.04	441.89	2854.93
2018-19	256.06	187.93	2039.47	375.96	2415.43	459.45	2874.87
2019-20	323.53	194.73	2139.59	365.67	2505.25	572.03	3077.28
2020-21	376.09	224.69	2182.31	380.68	2562.99	457.07	3020.06

Note: Real cost in each of the above categories (cost of pooling, incidental, acquisition, distribution and economic costs) is derived from deflating nominal costs with the wholesale price indices (WPI) of 2011. The nominal costs are obtained from the Audited Financial Statements.

Source: Audited Financial Statement from Food Corporation of India, New Delhi

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