

EFFICIENCY OF PROCUREMENT AND STORAGE OF PUBLIC DISTRIBUTION SYSTEM IN INDIA

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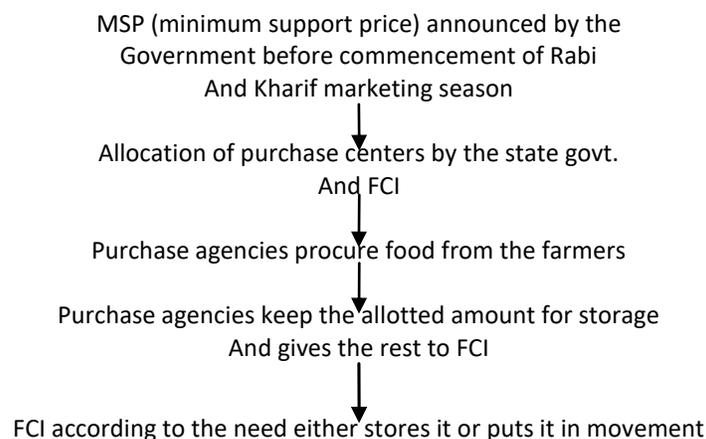
INTRODUCTION

PDS can be distinguished from private distribution in terms of control exercised by public authority and the motive predominantly being social welfare in contrast to private gain. Broadly, the system includes all the agencies that are involved from procurement stage to the final delivery of goods to the consumer. The agency that is involved in the process of procurement, transportation, storage and distribution are Food Corporation of India (FCI). At the state level it is the civil supply departments/corporations and fair price shops, which are the agencies, involved in provision of PDS. The fair price shops (FPS) are the last link in this process, which are mostly owned by private individuals. Hence, the most important aspect that distinguishes PDS is the involvement of government

agencies and government control over the entire distribution system.

Procurement of cereals is undertaken by FC1 on behalf of central government. So in estate government agencies also procure grain for the central pool as well as for their own account. Allocation to definite states is made by the central government. The State level civil supply organisations undertake the responsibility of allotment to FPS and supervising the functioning of FPS. FPS is subject to government control. FPS's are not allowed to sell other than government supplied essential commodities. Specified quantities are allotted to each FPS depending upon the number of ration cards attached to the FPS. The prices of these commodities are fixed by the government. The FPS dealer has to procure a license to operate a shop and required to maintain proper records, accounting to the stocks lifted by the dealer.

Procurement



The Food Corporation of India generally purchases food grains in the regulated markets and pays a commission to the agents for their services. The price paid is fixed by the government on the recommendations of the Commission for Agricultural Costs and Prices. In order to facilitate procurement, the prices in surplus states are depressed by restricting movement of grains outside the zones so that the prices closely approximate the support prices. Presently zoning is officially banned. It has been commented that compared to the prices in the open market in consuming states, the price offered by the FCI is generally lower which does not justify its being called as 'incentive price'.¹

The important decisions in procurement regarding the quantity to be procured and the prices to be offered. As mentioned earlier, prices to be offered are recommended by CACP. The Commission takes into account, the cost of production for agricultural commodities, crop situation and so on while deciding the price. The government generally accepts the recommendation and instructs the FCI to procure goods at the suggested price. "

The procurement price mostly acts as a support price in the case of wheat whereas for rice, it is a levy on the millers. Even in the case of wheat, at times it is a compulsion on farmers to sell to the FCI at the procurement price when it falls below market prices. This could happen in several ways. For eg. The traders are not allowed to bid in the procurement season until the FCI has achieved its procurement target.

The decision about the quantity to be purchased is difficult. Generally, a target is fixed keeping in view the crop situation. However,

because a support price is given to farmers, the FCI has to buy whatever is offered by farmers. In order to manage its. Operations, the FCI has several regional offices and for the purpose of administration, the country is divided into 135 FCI districts.

A large proportion of procurement for wheat is concentrated in four states of Punjab, Haryana, Uttar Pradesh and Madhya Pradesh. In the case of rice, Punjab, Haryana, Andhra Pradesh, Tamil Nadu are the important states. Procurement of rice from millers is in the form of levy. The levy is also being imposed on traders.²

The FCI carries out all the operations on behalf of the Central Government, and takes care of all aspects of the system from procurement, renting of warehouses, and storage to allocation to states. The net costs that it incurs in this operation over and above sales realisation through PDS is reimbursed to it by the Central Government and is referred to as ' food subsidy' in all government documents. The FCI maintains a buffer stock in order to stabilise grain prices and to provide minimum support prices to protect the farmers.

The procurement of food grains by Government is intended to:

- I. Provide remunerative prices to farmers, thereby avoiding distress sale of food grains; and build up a stock of food grains to ensure the supply of subsidised food grains to the needy and poor through the Targeted Public Distribution System (TPDS) and other welfare schemes.
- II. Provision of remunerative prices is ensured through the fixation of Minimum Support Prices (MSPs) by the Government of India for wheat, rice and coarse grains; these represent pre-

determined prices at which the Government of India undertakes open-ended procurement of food grains.

III. Food grains procurement is handled primarily through the Food Corporation of India (FCI), in association with the State Governments and their procurement agencies. FCI coordinates its functions through a country-wide network of offices with its Headquarters at New Delhi, five Zonal Offices, 23 Regional Offices, one Port Office and 165 District Offices. The food grains so procured are transferred out of surplus states to deficit states for storage and eventual distribution.

IV. With the objective of reducing the over-dependence of the State Governments on the FCI for TPDS and reducing transportation costs by ensuring availability of locally produced foodgrains,

the Government introduced (1997-98) the scheme of Decentralized Procurement (DCP) of foodgrains. Under this scheme, which is being implemented in eleven States/ UTs, the latter themselves procure foodgrains, retain the quantity required for TPDS and surrender the rest to FCI for the Central Pool. The subsidy in this case is given by the Government of India to the State Governments, instead of FCI.³

Foodgrains are procured at the Minimum Support Price (MSP) fixed by the Government. The MSP for Common and Grade 'A' paddy was fixed at Rs. 1000/- and Rs. 1030/- per quintal respectively for the 2010-11 Kharif Marketing Season (October, 2010- September, 2011). The MSP of wheat was fixed at Rs. 1100/- per quintal for the Rabi Marketing Season 2010-11. The comparative MSP of wheat and paddy since 2004-2005 to 2010-2011 (marketing seasons) is given below:

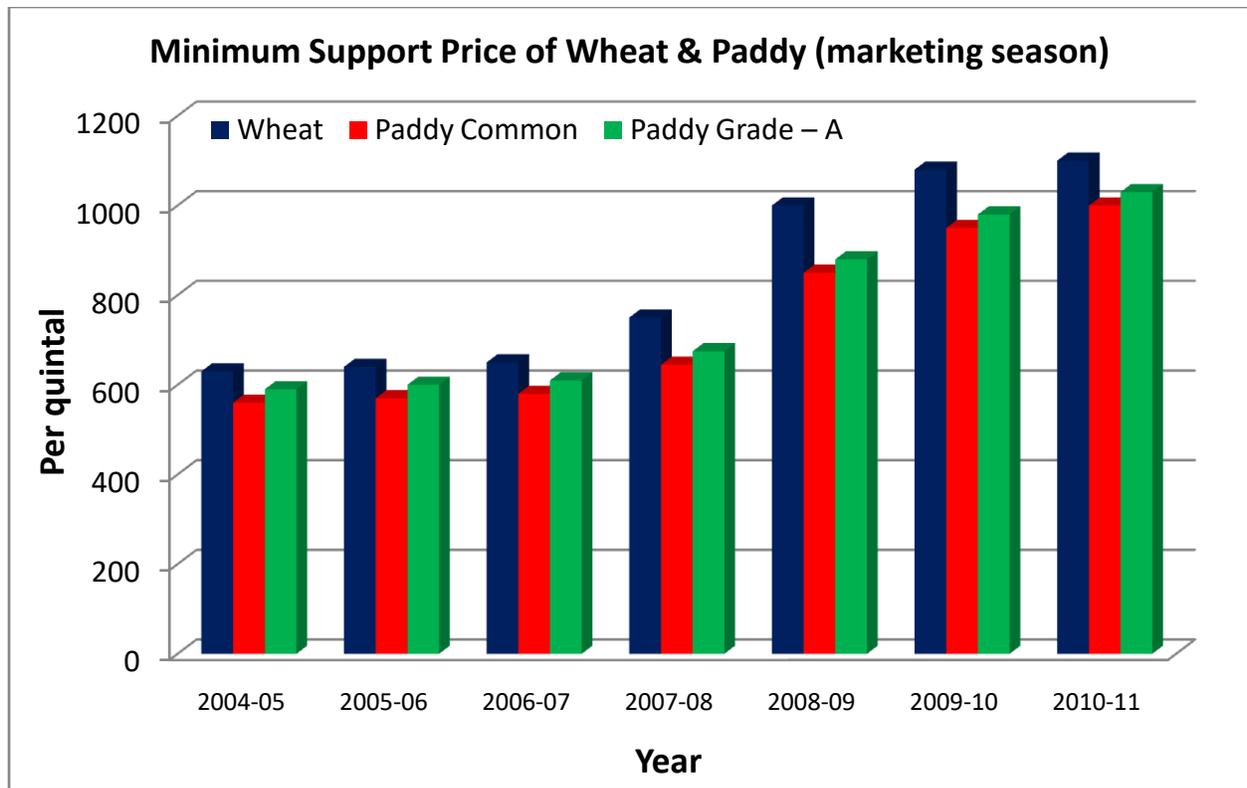
Table3. 1

Minimum Support Price of Wheat & Paddy (marketing season)

(Per quintal)

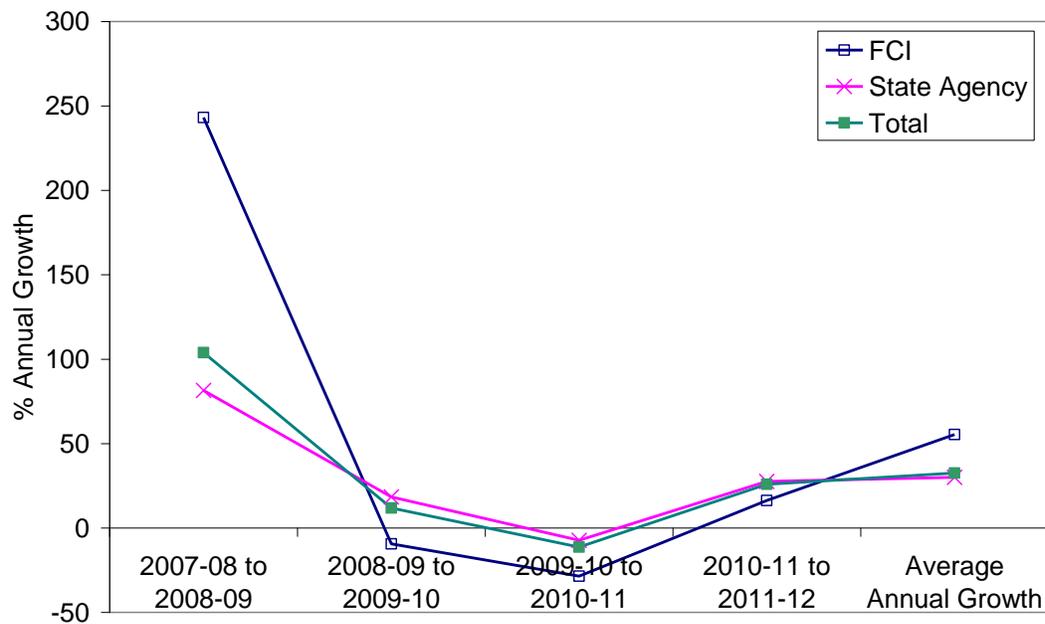
Year	Wheat	Paddy	
		Common	Grade – A
2004-05	630	560	590
2005-06	640	570	600
2006-07	650	580	610
2007-08	750	645	675
2008-09	1000	850	880
2009-10	1080	950	980
2010-11	1100	1000	1030

Source – Department of Food & Public Distribution (Annual Report 2010-11)



Percentage Annual Growth in Procurement of Wheat during last five years

(Fig in LMT's)



Model 1: (Procurement)

Compound Annual Growth Rate of Procurement Per Capita
 reg lpcp year

Source	SS	df	MS
Number of obs = 11			
-----+-----			
F(1, 9) = 6.84			
Model	.134723158	1	.134723158
Prob > F = 0.0280			
Residual	.177289331	9	.019698815
R-squared = 0.4318			
-----+-----			
Adj R-squared = 0.3687			
Total	.312012489	10	.031201249
Root MSE = .14035			

lpcp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
-----+-----					
year	.0349965	.0133821	2.62	0.028	
	.0047241	.0652689			
_cons	-73.41212	26.84449	-2.73	0.023	-
	134.1386	-12.68567			

$$\text{CAGR} = \{\text{Antilog } \beta_2 - 1\} * 100$$

$$= \{1.035616 - 1\} * 100$$

$$= \{0.035616\} * 100$$

$$= 3.5\%$$

Compound Annual growth rate of Procurement Per Capita of Food Grains and Non- Food Grains in the year 2001-2011 is 3.5 %which reveals the low efficiency of Procurement activity of PDS in India.

STORAGE

STORAGE OF FOOD GRAINS AND AUGMENTATION OF STORAGE CAPACITY

➤ **Background on storage related issues**

The storage capacity available with Government agencies both at the Central and the State levels are primarily used for keeping central stocks of foodgrains for the PDS and other Government schemes.⁴ The total covered storage capacity available with FCI and State Governments is a little over 42.6 million tonnes. The covered capacity available with FCI as on 01.01.2011 is 274.71 lakh tonnes and that available with State agencies as on 31.03.2010 is 151.19 lakh tonnes. As on 01.01.2011, FCI is having a total storage capacity of about 306 Lakh tonnes with a capacity utilization of 71%. The storage capacity available with FCI, CWC and SWC State-wise as on 01.01.2011 and the storage capacity available with the different State agencies as on 31.03.2010 are given in table below:

Table -3.7

State wise Storage Capacity – FCI, CWC & SWC as on 01/01/2011 (Lakh MTN’s)

S. No.	States/UTs	FCI	CWC	SWC	Total
1	Bihar	6.98	1.31	2.47	10.76
2	Orissa	6.44	3.73	4.14	14.31
3	West Bengal	11.01	6.5	2.16	19.67
4	Sikkim	0.11	0	0	0.11
5	Jharkhand	1.29	0.35	0	1.64
6	Assam	2.75	0.65	2.53	5.93

7	Punjab	78.77	78.77	6.9	143.72
8	Chandigarh	3.6	3.6	0.13	3.73
9	Rajsthan	17.71	17.71	4.02	29.44
10	U. P.	30.77	30.77	11.63	72.29
	Mean	15.94	14.34	3.40	30.16
	Standard Deviation	23.94	24.68	3.62	45.23

Source – Department of Food & Public Distribution (Annual Report 2010-11)

➤ **Storage capacity augmentation and constraints**

To further augment storage capacity for foodgrains, FCI have been endeavoring to hire more private capacities in the last 2 years. The General Managers. (Region) of FCI have been given full powers for hiring of private godowns for short term usage.⁵ The de-hiring of capacities in years of low procurement to save on storage charges, contributed significantly to increase in open CAP (Cover and Plinth) storage of food grains. De-hired covered capacities were not always available for re-hiring as they were put to alternate usages in the meanwhile.

➤ **CONSTRUCTION OF GODOWNS UNDER GUARANTEE SCHEME OF FCI**

- In order to create the storage capacity required for storing at least 4 months requirement of PDS in consumption States and for storing procured stocks in procurement States and with a view to substantially reduce CAP storage, the Department of Food & Public Distribution formulated a Scheme for construction of godowns for FCI as well as for the States undertaking Decentralized Procurement of foodgrains through private entrepreneurs in 2008. Assessment of additional storage needs under the scheme is based on the overall

procurement/consumption and the storage space already available. For the consuming areas, storage capacity is to be created to meet four month's requirement of PDS and other Welfare Schemes in a State. For the procurement areas, the highest stock levels in the last three years are considered to decide the storage capacity required.

- A state wise mapping of existing capacities and analysis of additional requirements was undertaken based on objective criteria by State level committees and a High Level Committee of FCI. Based on this analysis and criteria laid down in the scheme, State wise capacity requirement and locations were identified. Detailed terms and conditions for bid documents and model agreements were then formulated to minimize future legal complications. Under the scheme, the Food Corporation of India would now give a guarantee of ten years for assured hiring. A capacity of about 150 lakh tonnes is to be created under the scheme through private entrepreneurs and Central and State Warehousing Corporations. The capacity allocated State-wise under the scheme is given below:

Table- 3.8**Details Storage Capacity Approved By HLC**

As on 31.12.2010

(Figures in MT)

Sl. No.	State	Capacity by HLC	Nodal Agency	Capacity Transferred	Total
1	Andhra Pradesh	227,000	CWC/SWC	329,000	556,000
2	Bihar	300,000	CWC/SWC		300,000
3	Chhattisgarh	5,000,	CWC		5,000
4	Gujarat	45,000	CWC	307,000	352,000
5	Harayana	3,880,000	Hafed		3,880,000
6	Himanchal Pradesh	142,550	Himfed		142,550
7	Jammu & Kashmir	361,690	FCI		361,690
8	Jharkhand	175,000	CWC/SWC		175,000
9	Karanataka	205,000	CWC/SWC	431,000	636,000
10	Madhya Pradesh	1,40,000	MPWLC	295,000	435,000
11	Kerala	15,000	CWC		15,000
12	Maharashtra	99,500	CWC/SWC	715,000	814,500
13	Orissa	300,000	CWC/SWC		300,000
14	Punjab	7,125,000	Pungrain		7,125,000
15	Rajsthan		CWC/SWC	260,000	260,000
16	Tamil Nadu	345,000	FCI		345,000

Source – Department of Food & Public Distribution (Annual Report 2010-11)

- Out of this tenders have been finalized for creation of storage capacity of 16.06 lakh tonnes by the private entrepreneurs, while more capacities are likely to be finalized in the next few months. CWC and SWCs are constructing 5.31 and 10.64 lakh tonnes respectively under the Scheme, out of which a capacity of 1.13 lakh tonnes has already be completed by CWC/SWCs while about 2.65 lakh tonnes more will be completed by March, 2011 and the balance capacity is likely to be completed by March, 2012.
- To make the scheme more attractive for private entrepreneurs, the guarantee period was increased from five years to seven years and at present to 10 years. The ceiling of rate fixed for hiring of godowns has been revised from Rs. 3.80 per quintal per month to Rs. 4.78 per quintal per month. In appropriate cases, the High Level

Committee has been empowered to decide higher rates by recording reasons in writing.

- To make the warehousing industry and potential entrepreneurs aware of the scheme, FCI has also been holding investor meets in various States for highlighting the scheme guidelines to the prospective investors. In addition, nodal State agencies have also been holding similar investor meets. An interaction with warehousing industry & entrepreneurs was organized under the aegis of FICCI on 9th July, 2010 and a number of new suggestions for improvement in the Guarantee Scheme were received. Based on these feedbacks obtained from the industry, the Guarantee Scheme has been suitably modified.
- Further, in the Eleventh Five Year Plan, the Planning Commission has sanctioned Rs.149 crores for construction of storage godowns by FCI and the State Governments to which funds are released as grants-in-aid. This would result in the construction of about 1.88 lakh tonnes of storage capacity.

➤ **National Policy on Handling Storage and Transportation of Food Grains**

With a view to minimize storage and transit losses and to introduce modern technology, the Government approved the National Policy on Handling, Storage and Transportation of Foodgrains in June 2000. Under this policy, creation of integrated bulk handling, storage and transportation facilities to the tune of 5.5 lakh MTs at identified locations in producing and consuming areas has been taken up through private sector participation on Build-Own-Operate (BOO) basis.

➤ **COVER & PLINTH (CAP) STORAGE OF FOOD GRAINS**

Large quantity of food grains is stored by the FCI and State agencies in the open space due to the shortage of covered storage facilities. In food grains surplus states like Punjab and Haryana as well as in other States like U.P., Maharashtra, Madhya Pradesh, Uttarakhand and Gujarat, substantial quantity of wheat is stored under Cover and Plinth (CAP), an open storage system.⁶ There is a code of practice for the scientific storage of food grains to be stored under CAP. As there are adverse weather conditions, particularly, during monsoon period, there is a need to take all precautions to store the food grains safely under CAP storage.

Proper storage of food grains in CAP storage, proper use of polythene covers and timely use of prophylactic and curative measures for the control of stored grain insect pests and rats is helpful in minimizing the damage to food grains stored under CAP. The brief code of practice for scientific storage of food grains under CAP is as follows:

- Site (s) selected for 'CAP' storage must be of high plinth preferably with pucca masonry work.
- These sites should have proper drainage system and free from cracks and crevices, free from sinking floor, unwanted wild vegetation, good approach roads, provision for security etc.
- High tension electric wires should not pass over the sites.
- Adequate quantity of crates/stone slabs/wooden poles may be used so as to raise the height of the lowest bags of the stacks by nine inches.
- Stack planning must be done in such a manner so that alleyways (3 feet) gangways (5 feet) are clearly left.

- Stacks must be formed of standard size and height in a regular dome shape so as to avoid ballooning of the cover and avoid any accumulation of water on the stacks. The quantity of foodgrains to be stored in each stack should not be more than 150 MTs.
- Regular prophylactic and curative measures should be carried out for the control of stored grain insect pests in CAP storage. Besides, rat control measures must be taken regularly by fumigating the rat burrows with aluminum phosphide or by poisoning the rodents with Zinc Phosphide.
- During monsoon period, the stacks should be properly covered with good quality polythene covers along with nylon net and these should be tightened with plastic ropes to avoid ballooning due to cyclone/fast winds.
- Birds (Parrot, Sparrow, Pigeon, Crow and Maina, etc. the major avian pests for foodgrains stored in CAPs) are to be controlled more vigorously as compared to the godown by using bird scare, making noise, destroying nests etc. They not only eat away the grains but cause extensive spillage, damage to the bags and polythene covers, thus, rendering them unfit for fumigation.
- Moisture a major factor responsible for adversely affecting the quality/merchantability/nutritive values of the food grains, must be controlled meticulously. "CAP storage being in open, moisture in stocks from the outside comes in by way of leakage/seepage. This causes fungus development, heating, deterioration of food grains and creates conditions favorable for insect infestation.
- Whenever heating of the grain is observed, the stacks should be broken and aerated.
- The staff must have the first aid kit and knowledge for meeting the odd circumstances such as snake/scorpion bite, injury due to collapsing stacks etc.
- During monsoon season, on clear sunny days the stacks must be aerated to bring down the moisture content, as far as possible, to the optimum level.

Table 3.9

Annual Percentage of Growth in Storage Capacity (Covered)

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Average (2005- 2012)
Owned	0.15	0.08	0.08	0.15	0.00	0.15	0.15	0.11
Hired	-5.35	-5.66	-6.75	16.19	27.37	19.94	11.32	8.15
Total	-2.31	-2.41	-2.78	6.60	12.00	10.02	6.22	3.90

Source – Department of Food & Public Distribution, Govt. of India

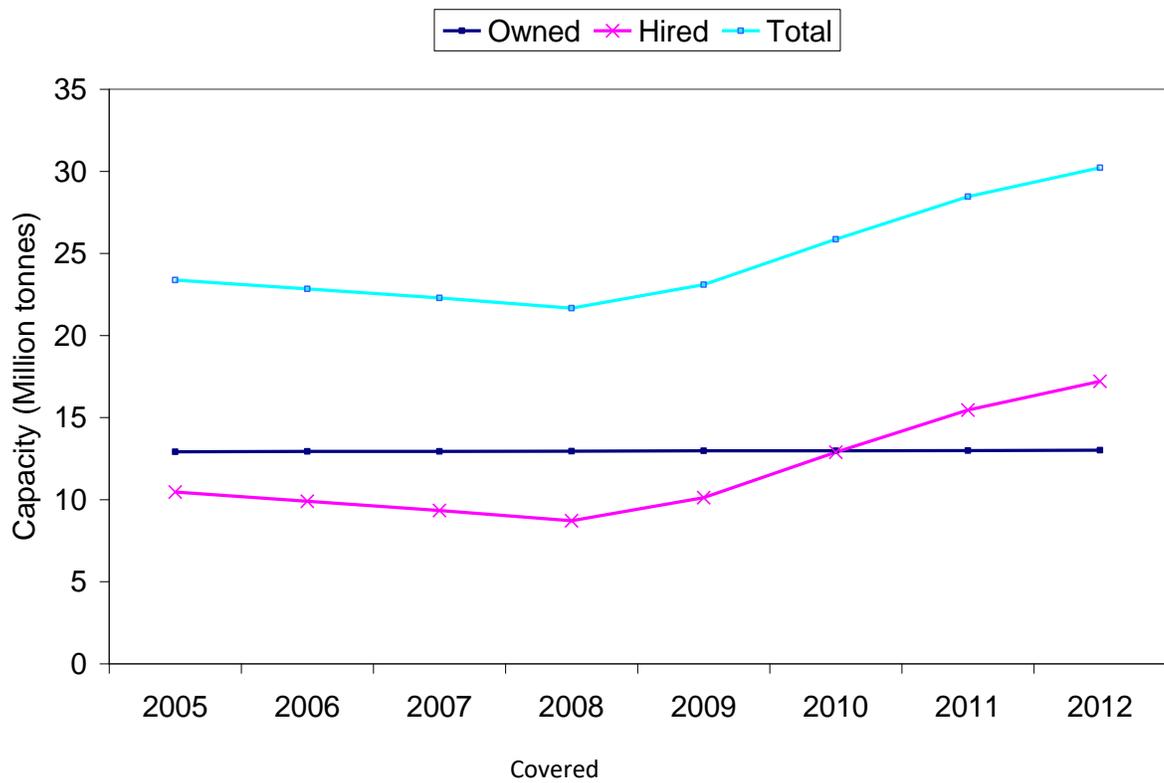
Table 3.10

Annual Percentage of Growth in Storage Capacity (CAP)

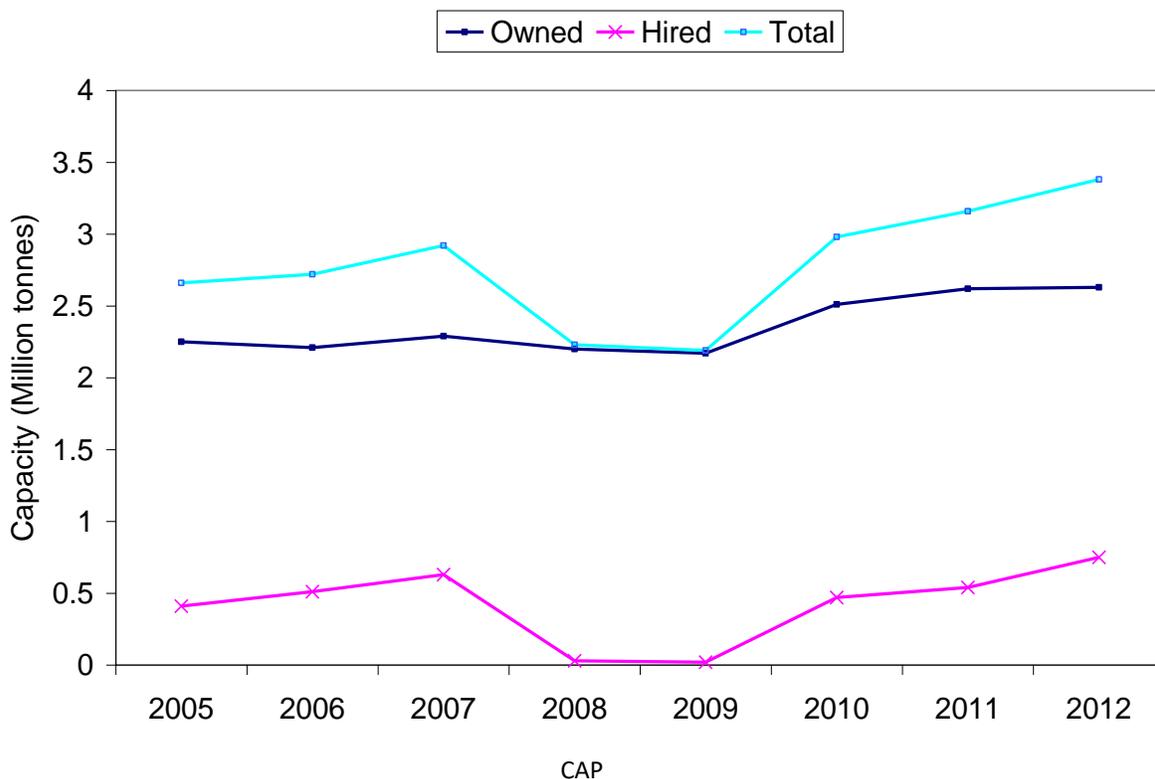
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Average (2005-2012)
Owned	-1.78	3.62	-3.93	-1.36	15.67	4.38	0.38	2.43
Hired	24.39	23.53	-95.24	-33.33	2250.00	14.89	38.89	317.59
Total	2.26	7.35	-23.63	-1.79	36.07	6.04	6.96	4.75

Source – Department of Food & Public Distribution, Govt. of India

Graph- 3.2



Graph- 3.3



Compound Annual Growth Rate of Storage Per Capita

reg lpcs year

Source	SS	df	MS
Number of obs =	11		

F(1, 4) = 48.43

Model		.939730931	1	.939730931
Prob > F	=	0.0022	Residual	.077611855 4
		.019402964	R-squared	= 0.9237

Adj R-squared = 0.9046

Total		1.01734279	5	.203468557
Root MSE	=	.13929		

lpcs	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
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year		.2317303	.0332978	6.96	0.002
		.1392809	.3241797		
_cons		-464.1882	66.87857	-6.94	0.002
		649.8729	-278.5035		

CAGR = {Antilog β₂- 1} * 100
 = { 1.26078-1}* 100
 = { 0.26078}* 100
 = 26.07%

Compound Annual Growth Rate of Storage activity of PDS Per Capita is 26.07% in the same period which is showing the very high efficiency of Storage Capacity.

CONCLUSION

Efficiency of PDS activities of Procurement, Storage and has been calculated from Compound Annual Growth Rate which were based on Secondary Data because Compound Annual Growth Rate is

geometric average progression ratio not the accounting term that provides constant rate over the time period so that the above mentioned percentage scaling has been done.

Compound Annual growth rate Per Capita of the year 2001-2011 is 3.5 %which reveals the low efficiency of Procurement activity Per Capita of PDS in India and CAGR per capita of Storage activity of PDS is 26.07% in the same period which is showing the very high efficiency of Storage Capacity. Thus it can be depicted that Procurement activity is declining in comparison to Storage activity which is increasing due to old storage of Food Grains as a result the quality of Food Grains become poor again which will show the inefficient aspect of PDS.

REFERENCES

- ✚ Datt, Ruddar (2000), "Food Security in India", S. Chand Group, New Delhi.
- ✚ Kumar, Vinit (2014), "*SEZs and Land Diversifications: Need for an Alternative Model,*" International Journal of Economics and Development Studies, New York, Vol.2, No. 3. / September-2014, (URL: <http://dx.doi.org/10.15640/jeds.v2n3a16>),
- ✚ Panday, V.K and Sharma, K.C. (1996), "Crop diversification and self sufficing in food grains" Indian Journal of Agricultural Economics, Vol.51 No.4 Oct.-Dec., 1996. Page. 649-50.
- ✚ Paroda, R.S. (1999), "The Challenges, opportunities. And strategies before national agricultural research system during the next millennium. In changing scenario in Farming practices, Policies and Management" Ed. Kalyan Singh Kushwaha, Kushwaha Farm- Book series, Udaipur. Page-2-4.
- ✚ Ram, G.S. (1996), "Food security system, poverty issues and rural development" A presidential address Agriculture Economics Research Review, Vol. 9 (2) 1996. Page.121-127.
- ✚ Ram, G.S. (1996), "Food security system, poverty issues and rural development" A presidential address Agriculture Economics Research Review, Vol. 9 (2) 1996. Page.121-127.
- ✚ Sain, K. (1996), "Diversification of Agriculture and food security system of India- A Review". Indian Journal of Agricultural Economics Vol. 51, No.4, Oct.-Dec.1996, page34-37.
- ✚ Satyasai, K. and Vishwanathan, K.U. (1996),"Diversification of Indian Agriculture and food Security, "Indian Journal of Agricultural Economics, Vol.51, No.4, Oct. -Dec. 1996.
- ✚ Selvarajan and Shankar, A. (2000), "Food grain production and consumption in India: Shifts trends and implications for food security "Agriculture Economic Research Review, Vol. 9(2) 2000. P 142 to 154.
- ✚ Sharma, J.S. and Gandhi, P.V. (1990),"Production and consumption of food grains in India: Implication of Accelerated Economic Growth and Poverty Alleviation", IFPRI research report 81, Washington.
- ✚ Sharma, M.K., Kumar, Vinit. and D.Yadav, *Crop-diversification in Uttar Pradesh : Evidence of Villegge Study*, International Journal of Scientific & Innovative Research Studies, Lucknow, Vol.1, Issue-2. / July-2014, (URL: <http://csirs.org.in>),
- ✚ Sharma, M.K., Sisodia, B.V.S. and Kumar, Vinit,(2014), "*Pattern of Growth and Scenario of Pulse Production in Uttar Pradesh : A Regional Study,*" International Journal of Innovative Social Science & Humanities Research,

- Lucknow, Vol.1, Issue-2. / December-2014, (URL: <http://csirs.org.in>).
- ✚ Singh, Anshu and Vinit Kumar,(2012), "Conflicts, Rural Development and Food Security in India" Indian Streams Research Journal, Maharashtra, Vol.2, Issue. IV/ May-2012.(URL:<http://isrj.net>),
 - ✚ Singh, Anshu and Vinit Kumar(2011), "Inclusive Growth of BPL Households : Why and how Public Distribution System (PDS) can be Revamped," International Journal of Research Analysis and Evaluation, Rajasthan Vol.-II, Issue-20. (URL:<http://ssmare.com>).
 - ✚ Singh, Anshu and Vinit Kumar,(2013), "National Food Security Bill: A Solution or Problem", Quest International Multidisciplinary Research Journal, Gujarat, Vol.-II, Issue-II / December-2013. (URL:<http://mahidachintan.com>).
 - ✚ Srivastava, G.C. and Sinha, R. (1996), "Food security and 6 nutrition management in farm and Non-farm households in sub-urabs of Patna" Agriculture Economics Research Review Vol 9(2) 1996, Page. 214-215.
 - ✚ Suryanarayan, M.H. (2003), Food Policy and the Indian State: The Public Distribution System in India, Jos Mooj, Oxford University press, Delhi.
 - ✚ Suryanarayana, M.H. (1995), PDS Reforms and Scope for Commodity Based Targetting. Mimeo, page. 115.
 - ✚ Swaminathan, M. (1996), "Food Security in India: A village view of the Public Distribution System in Maharashtra, "Indian Journal of Agriculture Economics Vol. 51, No. 4, Oct.-Dec.
 - ✚ Swaminathan, M.(2001), Public Support for Food Security: The Public Distribution System in India, United Nations Development in India, Vol 12, India Pvt. Ltd. Publication, New Delhi
 - ✚ Tyagi D.S. (1990), Managing India's Food Economy: Problems and Alternatives. Sage publication, New Delhi.
 - ✚ Vadkani, M.V. (1993), Agricultural Policy in India: context. Issues and Instruments. Development Research Group study, No.5, Reserve Bank of India, Bombay.

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¹ V.M. Rao (1996)

² M.V. Vadkani (1993)

³ Shikha Jha (2000)

⁴ M.H. Suryanarayana (1995)

⁵ Ruddar Datt (2000)

⁶ Govt. of India (1990)