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**RESEARCH PAPER**

# Analysis of benefits accrued by stakeholders from storage of different commodities in the warehouses in Karnataka

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**Abstract**: Warehousing is an essential infrastructure for trade, commerce and physical distribution of agricultural goods. It helps to overcome distress sale especially for farmers and the price fluctuations during the peak season. The important benefit stakeholders like farmers and traders get from storage is financial assistance by pledging the Negotiable Warehouse Receipts (NWR) in scheduled commercial banks which is received against the storage of commodities in warehouses of Central Warehouse Corporation (CWC), Karnataka State Warehouse Corporation (KSWC) and private warehouses. In this context the present study analyses the benefits gained by the stakeholders mainly farmers and traders by storing different commodities in the above-mentioned warehouses in Karnataka. The study was conducted in Gulbarga and Dharwad districts which were purposively selected based on large number of warehouses present in the selected study areas. Overall, 11 warehouses were selected from each of the two districts. Among these three farmers and three traders with total of 66 farmers and 66 traders were selected from warehouses of the study area. Primary information was gathered by using personnel interview method through pretested questionnaire during 2016-17 and collected data was analyzed by tabular and percentage analysis. The benefits accrued from storage of commodities were mainly short duration crops like green gram, maize, Bengal gram, black gram *etc*.

**Key words**: Central Warehouse Corporation, Farmers, Karnataka State Warehouse Corporation, Storage, Traders

## Introduction

'Warehouse' means any building, structure or other protected enclosure which is used for the purpose of storing goods on behalf of depositors but does not include cloak rooms attached to hotels, railway stations, the premises of other public carriers and the like. A licensed warehouse is required to obtain weather, grader and sampler licenses as well from the licensing authority, which satisfies itself about the storage worthiness of the structure to be licensed before the grant of the license. Warehousing is an economic activity and denotes a dynamic aspect of commercial storage. It provides for safe keeping of goods in an orderly manner at suitable locations for easy retrieval when required for use. Warehousing is a trade involving deposit of goods, merchandise, chattel, commodities and wares in the warehouses for safe custody and return on payment of warehousing charges (Alam *et al*., 2007).

A grain saved is a grain produced. These golden words remain as a mere proverb when one visualizes the quantum of post-harvest wastages and losses of agricultural produce due to inefficient storage of commodities. India is an agro-based economy with the agriculture sector providing employment for more than half of the country's massive population (Thejeswini *et al.*, 2014). About 60-70 per cent of food grains produced remains in the rural sector for varying period. Farmers store grain in bulk, using different types of storage structures made from locally available materials. Storage losses constitute a major share of food grain loss in post production operations. However, to overcome this loss warehouses were constructed by Government of India under the recommendation of All India Rural Credit Survey committee 1954 by Reserve Bank of India which led to adoption of the Act of Agricultural Produce (Developing and Warehousing) Corporation 1956, in which Central and State warehouse corporation were established in public sector concerning agricultural produce. In 1962, it was established by more extensive Warehousing Corporation Act. The major aim of these corporations were to provide scientific storage structures for stored commodities against all odds of post harvest losses and a negotiable receipt which can pledged for loan against stored commodities in the warehouses in any scheduled bank of the country (Nachiket and Kshama, 2009). There are also private warehouses constructed which serve the same functions as these above warehouse corporation.

In 2007, Parliament enacted the 2007 Warehousing Act, which came into force on 25 October 2010. This established a key regulator for Negotiable Warehouse Receipts (NWR), the Warehousing Development and Regulatory Authority (WDRA). The WDR Act provides for the growth and regulation of warehouses, the negotiability of receipts from warehouses, the establishment of a Warehousing Development and Regulatory Authority and matters related to or incidental to it (Jairath *et al.,* 2014). A warehouse supplier must first register its warehouses with WDRA in order to begin issuing NWRs. It was expected that a number of stakeholders such as banks, financial institutions, insurance companies, trade, commodities exchanges and customers would benefit from the WDRA-regaled NWRs. A total of 76 stores with WDRA were recorded in a period of four years (Nikhil and Bhatia, 2008).

Warehousing facilities are required to enhance farmer's inventory holding ability to allow them to make greater yields, decreasing the price spread and increasing their proportion in

the consumer rupee. This benefit of storage varies from crop to crop (Shalendra *et al*., 2015). Therefore, the warehouse is significant agricultural development infrastructure. However, agricultural growth is a prerequisite for developing the warehouse.

**Material and methods**

The random sampling procedure was adopted to select the farmers and traders. In the first phase, two districts namely Gulbarga and Dharwad were purposively selected based on large number of warehouses like Central Warehouse Corporation (CWC), Karnataka State Warehouse Corporation (KSWC) and private warehouse. Among the public warehouses, two CWC's and four KSWC's, and 5 private warehouses were selected from each district.

Primary data were used for this study and were collected using a well-structured questionnaire through personal interview method for the year 2016-17. In order to elicit the primary information, three farmers and three traders associated with each warehouse were selected, which constituted a total of 66 farmers and 66 traders for the study. Descriptive statistics such as percentages were used to analyze the benefits accrued by stakeholders, mainly by the farmers and the traders in the study area.

**Results and discussion**

**Benefits accrued by farmers and traders on utilizing various facilities in the selected warehouses**

The most popular crops stored by farmers were Tur, Bajra, Soybean, Green gram, Bengal gram, Groundnut pod, Sunflower and Jowar. The percentage of quantity stored in relation to total production of a crop was also analyzed and is presented in Table 1. The percentage of total production of a commodity stored in Gulbarga district was recorded maximum for Tur (48 %), followed by Bengal gram (40 %), Bajra (39 %), Green gram (35 %) and Sunflower (28 %). In Dharwad district the maximum percentage of commodity stored recorded was Bengal gram (33 %) followed by Green gram (31 %), Soybean (23 %), Jowar (19 %) and Groundnut pod (13 %). The benefits accrued by farmers on storage in Gulbarga and Dharwad district was found maximum in Bengal gram 38.76 per cent and 32.5 per cent respectively. This was followed by other crops like Bajra (24.77 %), sunflower (13.53 %), Jowar (16.70 %), Green gram (10.17 %), Soybean (15.01 %) and Tur (1.49 %).

The most popular crops stored by traders were Tur, Bajra, Soybean, Groundnut pod, Bengal gram, Sunflower, Black gram, Sesamum, Green gram, Maize, Safflower, Jowar and Wheat. The percentage of quantity stored in relation to total quantity of commodity purchased was also analyzed. Table 2 shows the percentage of total quantity purchased of which commodity stored in Gulbarga recorded maximum for Tur (79 %) followed by Green gram (73 %), Sunflower (68 %), Bengal gram (63 %), Safflower (62 %), Black gram (60 %), Bajra (55 %) and Sesame (35 %). In Dharwad maximum storage was recorded for Maize (77 %) followed by Soybean (76 %), Green Gram (72 %), Groundnut pod (69 %), Jowar (67 %), Wheat (55 %) and Bengal gram (52 %). The benefits accrued by traders on storage in Gulbarga was found maximum in Black gram (64.94 %) followed by Bengal gram (42.16 %), Sesame (37.16 %), Green gram (19.62 %), Sunflower (17.17 %), Bajra (14.28 %), Safflower (8.92 %) and Tur (0.91 %). Wherein Dharwad maximum was found in Bengal gram (36.72 %) followed by Wheat (31.39 %), Groundnut pod (24.08 %), Jowar (18.47 %), Green gram (11.90 %), Maize (8.65 %) and Soybean (7.20 %).

**Benefits gained by farmers and traders from availing loan against warehouse receipt in selected warehouses**

Finance is the important aspect for every farmer to fulfill important needs. The availability of finance against warehouse

Table 1. Benefits accrued by farmers on utilization of warehousing facilities in selected warehouses (n=66)

| District | Commodity | Commodity sold immediately after harvest (%) | Commodity stored (%) | Average price realized immediately after harvest (₹/q) | Average price realized after storage (₹/q) | Average storage cost* (₹/q) | Accrued benefit out of harvest period price (%) |
|---|---|---|---|---|---|---|---|
| Gulbarga | *Kharif* | - | - | - | - | - | - |
| | Bajra | 61 | 39 | 1145 | 1386 | 71.00 | 24.77 |
| | Tur | 52 | 48 | 5963 | 6145 | 92.72 | 1.49 |
| | Green gram | 65 | 35 | 4544 | 5094 | 87.45 | 10.17 |
| | *Rabi* | - | - | - | - | - | - |
| | Bengal gram | 60 | 40 | 5610 | 7845 | 60.50 | 38.76 |
| | Sunflower | 72 | 28 | 2682 | 3147 | 102.00 | 13.53 |
| Dharwad | *Kharif* | - | - | - | - | - | - |
| | Green gram | 69 | 31 | 4425 | 5124 | 92.50 | 13.07 |
| | Soybean | 77 | 23 | 2278 | 2756 | 135.87 | 15.01 |
| | Groundnut pod | 87 | 13 | 3821 | 4378 | 32.14 | 13.73 |
| | *Rabi* | - | - | - | - | - | - |
| | Jowar | 81 | 19 | 2345 | 2798 | 61.24 | 16.70 |
| | Bengal gram | 67 | 33 | 5784 | 7714 | 50.25 | 32.50 |

*: Here the cost included transportation, storage rent, handling charges, packaging cost and interest opportunity. Interest opportunity was calculated by assuming that a trader sale immediately and puts the amount for a term-deposit at interest rate of 7 per cent per annum

Table 2. Benefits accrued by traders on utilization of warehousing facilities in selected warehouses (n=66)

| District | Commodity | Commodity sold immediately (%) | Commodity stored (%) | Average purchasing price (₹/q) | Average price realized after storage* (₹/q) | Average storage cost (₹/q) | Accrued benefit out of purchasing price (%) |
|---|---|---|---|---|---|---|---|
| Gulbarga | *Kharif* | - | - | - | - | - | - |
| | Tur | 21 | 79 | 5874 | 6021 | 93.45 | 0.91 |
| | Bajra | 45 | 55 | 1113 | 1345 | 73.01 | 14.28 |
| | Blackgram | 40 | 60 | 3245 | 5474 | 121.45 | 64.94 |
| | Sesamum | 65 | 35 | 3478 | 4923 | 152.23 | 37.16 |
| | Green gram | 27 | 73 | 4024 | 4897 | 83.45 | 19.62 |
| | *Rabi* | - | - | - | - | - | - |
| | Bengal gram | 37 | 63 | 5577 | 7981 | 52.40 | 42.16 |
| | Safflower | 38 | 62 | 2415 | 2750 | 119.45 | 8.92 |
| | Sun flower | 32 | 68 | 2512 | 3045 | 101.45 | 17.17 |
| Dharwad | *Kharif* | - | - | - | - | - | - |
| | Soybean | 24 | 76 | 2278 | 2567 | 124.78 | 7.20 |
| | Maize | 23 | 77 | 1327 | 1487 | 45.12 | 8.65 |
| | Ground nut pod | 31 | 69 | 3741 | 4674 | 32.14 | 24.08 |
| | Green gram | 28 | 72 | 4524 | 5147 | 84.21 | 11.90 |
| | *Rabi* | - | - | - | - | - | - |
| | Jowar | 33 | 67 | 2311 | 2798 | 60.14 | 18.47 |
| | Bengal gram | 48 | 52 | 5412 | 7451 | 51.40 | 36.72 |
| | Wheat | 45 | 55 | 2897 | 3874 | 67.45 | 31.39 |

*: Here the cost included transportation, storage rent, handling charges, packaging cost and interest opportunity

Table 3. Benefit gained by farmers from availing loan against warehouse receipt in selected warehouses (n=66)

| District | Commodity | Duration of borrowing (days) | Average price at the time of borrowing (₹/q) | Average price at the time of sale (₹/q) | Average interest paid (₹) | Average cost of storage* (₹/q) | Benefit accrued from loan against warehouse receipt (%) |
|---|---|---|---|---|---|---|---|
| Gulbarga | Tur | 110 | 5874 | 6145 | 9.12 | 92.72 | 2.89 |
| | Green gram | 103 | 4544 | 5094 | 8.21 | 87.45 | 9.90 |
| Dharwad | Jowar | 104 | 2245 | 2798 | 8.45 | 61.24 | 21.52 |
| | Green gram | 85 | 4425 | 5124 | 0 | 92.50 | 13.70 |

*: Here the cost included transportation, storage rent, handling charges, packaging cost and interest opportunity

Table 4. Benefit gained by traders from availing loan against warehouse receipt in selected warehouses (n=66)

| District | Commodity | Duration of borrowing (days) | Average price at the time of borrowing (₹/q) | Average price at the time of sale (₹/q) | Average interest paid (₹) | Average cost of storage* (₹/q) | Benefit accrued from loan against warehouse receipt (%) |
|---|---|---|---|---|---|---|---|
| Gulbarga | Black gram | 161 | 3344 | 5474 | 9.2 | 121.45 | 59.78 |
| | Tur | 178 | 5671 | 6021 | 9.7 | 93.45 | 4.35 |
| | Green gram | 110 | 4313 | 4897 | 8.1 | 83.45 | 11.41 |
| Dharwad | Jowar | 97 | 2333 | 2798 | 8.1 | 60.14 | 17.00 |
| | Green gram | 107 | 4354 | 5147 | 8.7 | 84.21 | 16.07 |
| | Maize | 96 | 1354 | 1487 | 8.1 | 45.12 | 5.89 |
| | Wheat | 113 | 2979 | 3874 | 8.3 | 67.45 | 27.50 |

*: Here the cost included transportation, storage rent, handling charges, packaging cost and interest opportunity

receipts help farmers to realize better price for their produce and helped in meeting immediate cash requirement. Table 3 interprets that, the benefit accrued by farmers in Gulbarga by availing loan against warehouse receipt was maximum for Green gram that is 9.90 per cent followed by Tur (2.89 %), whereas in Dharwad it was found maximum for Jowar (21.52 %) followed by Green gram (13.70 %).

The availability of finance against warehouse receipts helped the traders to realize better price for their commodity and the need of immediate cash for payment of delayed expenditure. Table 4 interprets that, the benefit accrued by traders in Gulbarga by availing loan against warehouse receipt wass maximum for Black gram (59.78 %), followed by Green gram (11.41 %) and Tur 4.35 %). In Dharwad it was found

maximum for Wheat (27.50 %) followed by Jowar 17 %), Green gram (16.07 %) and Maize (5.89 %). Similar results were obtained by Shalendra *et al*. (2015).

## Conclusion

The beneficial element of warehousing is that it enhances stakeholders waiting capacity so that they can sell their products when the market offers remunerative rates. However, it is observed from the study that traders reap more benefits when compared to farmers in the study area, whether in storage or availing loan against Negotiable warehouse receipts (NWR). There is a need for enhancement and widespreading of knowledge on benefits of storage and NWR's among majority of farmers mainly small and medium farmers who get benefited during distress sales and also overcome the need of financial assistance immediately through NWR's.

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