



## Review Article

# AGRICULTURAL MARKET INFRASTRUCTURE- STATUS AND LEAKAGES

RAJWADI A.A.<sup>\*1</sup>, MECWAN J.<sup>2</sup> AND PUNDIR R.S.<sup>3</sup>

<sup>1</sup>Department of Agricultural Economics, B A College of Agriculture, Anand Agricultural University, Anand, 388110, Gujarat, India

<sup>2</sup>National Agricultural Higher Education Project (NAHEP), Anand Agricultural University, Anand, 388110, Gujarat, India

<sup>3</sup>Professor & (I/C) Principal and Dean, International Agribusiness Management Institute, Anand Agricultural University, Anand, 388110, Gujarat, India

\*Corresponding Author: Email - [alvira.rajwadi@gmail.com](mailto:alvira.rajwadi@gmail.com)

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**Abstract:** India is the 2<sup>nd</sup> largest populated country in the world and ranks 7<sup>th</sup> in the world for land coverage. And there is a need to satisfy food demand of such a huge country, so self-sufficiency in food supply is necessary. At present in Indian agricultural scenario, due to lack of proper post-harvest practices and storage facilities, food losses range from 1 per cent to 11 per cent. Efforts for bridging the gap between India's food production and storage infrastructure can be useful to minimize these losses and ultimately achieving self-sufficiency. Storage of agricultural commodities is one of the important components in agricultural marketing. India possesses a good position at world level in production of food-grains and vegetable. Even though, India is facing problem of lack of proper storage facility, transportation facility and credit unavailability. These lead higher losses of food grains as well as marketing cost. Therefore, there is dire need to implement AMI policy efficiently.

**Keywords:** Agricultural storage, Agricultural commodities, Warehouses, Cold storage, Transport infrastructure

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## Introduction

Agriculture plays a vital role in Indian economy. Over 58 per cent of the rural households depends on agriculture as their main source of livelihood. Agriculture, along with fisheries and forestry, is one of the largest contributors to the Gross Domestic Product (GDP). Over 44 per cent of labour force are occupied in farming alone. Here marketing is very important and crucial part. And marketing infrastructure helps in better marketing of agricultural produce. Infrastructure facility leads to reduction in marketing cost, which is crucial for increasing the income of farmers and reducing cost to the consumers. The sound marketing infrastructure system provides nourishment to production activity, income generation and positive effect on income distribution [1,2].

Table-1 Losses of Agriculture produce

SrNo	Food Category	Annual percentage losses in India
1	Grains	4.6 – 6.0 % (Cereal)
2	Fruits & Vegetables	4.6 – 15.9 %
3	Dairy	0.90 %
4	Meat	2.70 %
5	Poultry	7.2 % (Eggs) 6.7 % (Meat)
6	Fish	5.2 % (In land) 10.5 % (Marine)

Source: NAAS

## Types of market infrastructure

### Agricultural produce market

There are about 2477 principal regulated market and 4843 sub-market yards regulated by the respective APMCs in India.

### Storage facility

Central Warehousing Corporation, State Warehousing Corporation and Cooperatives provide storage facility at national level, state level and taluka or village level, respectively.

## Cold Storage

The wastage level in perishables in India are significantly high. Estimated value of losses of agri-produce currently stands at 92,651 crores. Currently 95 per cent cold storages are owned by private sector, 3 per cent by cooperatives and 2 per cent by public sector undertakings.

## Transportation infrastructure

A well-developed and efficient system of transportation helps in the expansion of markets, reduce the transport time and costs of transportation of the commodities. Indian had about 142126 kms of national highways and expressways and 176166 kms of state highways.

## Agricultural credit infrastructure

Agricultural credit is available to the farmers for storage, processing and marketing of agricultural produce. Agricultural credit is distributed through a multi-stage network consisting of Commercial banks, Regional Rural Banks, Primary Agricultural Co-operative Credit Society, Secondary Cooperative Credit Society and District Central Cooperatives.

## Agriculture Infrastructure Fund

It is a scheme lunches by PM of India. It provides fund to construct any type of post-harvest infrastructure. And it provides fund to any individual farmer to any organization.

## Agriculture Market Infrastructure

It is well known that small farmers do not have economic strength to retain produce with them till the market prices are favourable. Therefore, government of India has lunched 'Grameen Bhandaran Yojana' on 01/04/2001. The scheme has been subsumed into capital investment subsidy sub-scheme "Agricultural Marketing Infrastructure (AMI)" of Integrated Scheme for Agricultural Marketing (ISAM) scheme.

This AMI scheme was temporarily stopped on 05/08/2014 for general category promoters due to exhaustion of fund. Recently, the Union Cabinet has given approval to central sector scheme, Agriculture Infrastructure Fund, to provide credit for farm and farm- processing based activities. Over, Rs. 20 lakh crore packages announced in response to the Covid-19 crisis. The main aim of scheme is to provide medium-long term debt financing facility for investment in variable projects for post-harvest management Infrastructure and community farming assets from a period of financial year 2020 to 2029.

Table-2 Storage capacity for Central Pool Stock for the last ten years

Year	Capacity with FCI (LMT)	Storage Capacity other Agencies (LMT)	Total (LMT)
01-04-2011	316.10	291.32	607.42
01-04-2012	336.04	341.35	677.39
01-04-2013	377.35	354.28	731.63
01-04-2014	368.90	379.18	748.08
01-04-2015	356.63	352.59	709.22
01-04-2016	357.89	456.95	814.84
01-04-2017	352.71	420.22	772.93
01-04-2018	362.50	480.53	843.03
01-04-2019	388.65	467.03	855.68
01-04-2020	412.03	343.91	755.94

Source: Ministry of Consumer Affairs, Food and Public Distribution (2019)

### Key features of scheme

Provide financial support: Rs. 1 lakh Crore will be provided by banks and financial institutions as loan to PACS, FPOs, SHG, JLGs, Multipurpose Cooperative Societies, etc., Interest Subvention: loans will have interest subvention of 3 per cent per annum up to a limit of Rs. 2 crores for a maximum period of seven years. CGTMSE scheme: under Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme, loan up to Rs. 2 crores will be provided. Farmer Producer Organizations: Credit facility will be created under FPO promotion scheme.

### Management

The fund will be managed and monitored through an online Management Information System (MIS) platform. The National, State and District level monitoring committees will be set up to ensure real-time monitoring and effective feed-back.

### Agricultural Produce market

Hemalatha & Paramasivan(2016) [3] conducted a study on standard and mobile infrastructure facility available to retailers, and revealed that 96 super market owner strongly agree that they had standard infrastructure facility while 36 grocery shopkeeper and 4 vegetable vendor strongly agree that they had standard infrastructure facility, while 170 vegetable vendor disagree and 62 vegetable vendor strongly disagree about standard infrastructure facility available to them. 103 super market owners strongly agree for having mobile infrastructure facility like, transport facility. While 181 vegetable vendors were strongly disagreeing about not having mobile infrastructure facility, and among grocery shopkeeper 42 were strongly agree and 43 agree of having mobile infrastructure facility.

### Storage facility

Alam *et al.* (2007) [4] studied production, consumption and storage of paddy by different farm size in study area and concluded that average production was increases as farm size increases, and average consumption for family for all the farm size was more or less equal while average storage available was less compared to production. Alam *et al.* (2007) founded storage cost and loss of paddy in different storage structures and concluded that storage cost was higher in motka (12 Rs/40kg) type of structure followed by steel drum (10 Rs/40Kg) and gunny bag (10 Rs/40Kg) while the storage loss was higher in dole (3.75 %) type of structure followed by berh (3.50 %) and gola (3.50%) type structure. Alam *et al.* (2007) conducted a study on storage cost and loss of wheat and mustard in different storage structures and revealed that storage cost was higher in steel drum (12 Rs/40Kg) and jala (20 Rs/40Kg) type structure for wheat and mustard respectively.

While storage loss was higher in gunny bag for both wheat and mustard that was 2.5 and 1.5 per cent respectively. Alam *et al.* (2007) revealed that all the farmers viz., small medium and large farmers prefer cooperative storage in stand of private storage. Sharma, *et al.* (2015) [5] studied the problem in food grain storage and found that most common problem faced by farmers was gap in production and storage needs followed by maintenance issues, technical aspects and negligence of minor food grains. Also found the possible solutions for better storage and revealed that administrative and political will, efficient and affordable storage structures, community drying cum storage complexes, handy gadgets, moisture-temperature storage life charts, pest control, better transportation, storage protocols and subsidies, loans and other support systems.

Chaturvedi and Raj (2015) [6] conducted a study on gap and problems in storage facility with FCI and revealed that from the year 2008 to 2012 gap in storage capacity was increased from 59.95 LMT to 331.85 LMT. Storage of food grains in open space is the most common problem in storage followed by poor condition of storage facilities, storage of old crops leading to damage of food grains, efficient capacity utilization and non-utilization of available storage capacity for surplus stock of wheat.

Kumar and Lakshminarayana (2018) [7] studied the awareness and problem in current storage system using Likert five point scale and observed that NDDB warehouse had mean value of 4.344 followed by state warehouse corporation with mean of 4.152, central warehouse corporation with mean of 3.952, PAU bin with mean of 3.924, special commodity warehouse with mean of 3.892, hapur tekka with mean of 3.876, refrigerated warehouse with mean 3.832, FCI with mean of 3.804, state warehousing with mean of 3.798, general warehouse with mean of 3.788, underground storage with mean 3.608, pusa bin with mean of 3.606, cover and plinth storage with mean of 3.600, bounded warehouses with mean of 3.584 public warehouse with mean of 3.482, silos with the mean of 3.460, surface storage with mean of 3.348 and private warehouses with mean of 3.212. and further observed that lack of facilities with mean of 4.048, time horizon with the mean of 3.722, market fluctuations with mean of 3.694, transaction cost with mean of 3.624, lack of guidance with mean of 3.540, risk averse with mean of 3.450, lack of storage knowledge with mean of 3.400, labour cost effective with mean of 3.380, increasing commitments with mean of 3.358, lack of trust with mean of 3.186, personal problems with mean of 3.044, theft with mean of 3.022, sorting with mean of 2.858, cash credit from bank with the mean 2.738 and wastage with the mean 2.534 were the major problems faced by the farmers.

### Transportation infrastructure

Barnabas, (2017) [8] studied the positive effect of transportation in marketing and role of transportation in creating market for agricultural products and revealed that 92 per cent respondents were strongly agree that transportation had positive effect on marketing. And further revealed that 93.3 per cent farmers were strongly agree that transportation had major role in creating market for agricultural products. Barnabas, (2017) founded role of transportation system in reducing spoilage and wastage and concluded that 66.6 per cent farmers were strongly agree that transportation system reduces the spoilage and wastage of agricultural products while 26.6 per cent were agree and 6.6 per cent were disagree. Further concluded that 60 per cent farmers were strongly agree that transportation problem could rise the cost of farm products. While 13.3 per cent were agree, 13.3 per cent were disagree and 13.3 percent were strongly disagreed.

### Credit facility

Ojonugwa and Idoko (2013) [9] conducted a study on awareness of federal government agricultural credit scheme among farmers and found that 66.67 percent respondents were not aware about the scheme while 33.33 per cent were aware about the scheme. While they further studied the quick access to agricultural loans and revealed that 100 per cent respondent having not availability of quick loans. And further found that 53.33 per cent respondents, source of credit was private money lenders while 20.00 per cent had source from their own savings, 13.33 per cent took credit from their friends, 6.67 per cent took credit from cooperative society and 3.33 per cent respondents, for their credit depends upon bank of agriculture and microfinance banks.

Ojonugwa and Idoko (2013) studied the challenges in accessing agricultural credit from formal sources and concluded that 43.33 per cent respondent facing challenge of late approval of credit followed by 16.67 per cent facing collateral challenge, 10 per cent facing problem of no. banks in locality or village and bureaucratic bottlenecks and 6.67 per cent facing problem of high interest rate, guarantor and lack of awareness. Further studied the challenges in accessing agricultural credit from informal sources and revealed that 53.33 per cent respondent facing problem of high interest rate followed by inadequate credits by 23.33 per cent respondents, sentiments by 16.67 per cent respondents and guarantor by 6.67 per cent respondents.

#### Constraints in credit facility

Anonymous (2007) [10] investigated on reasons by non-KCC farmers for not availing the credit facilities from banks and ranking was given to them. Unawareness regarding the schemes due to lack of contact with government extension officials was given first rank followed by self-contentment, fear of possible embarrassment by the bank officials, easy approachability to the money-lender, rejection of farmers loan application due to lack of saving in the bank and often without any genuine reason, in capacity to give consideration money for getting loan, fear of paper works, cultivation time is being wasted for getting loan, low amount of loan/high transaction cost, uneconomic land holding by the farmers and fear of inability to repay the loan amount. And further studied the difficulties faced by farmers in borrowing from banks. Delay in sectioning the proposal by bank was the major difficulty faced by farmer, followed by insufficient loan amount, high transaction cost, they have to give consideration money for getting loan, bank want F. D./collateral security, bad behaviour by bank officials and defaulters due to loan disbursement after the sowing season is over and therefore diversion of loan takes place.

Gupta, et al., (2018) [11] conducted a study on distribution of KCC holders according to constraints faced by farmers using mean score and ranking method. illiteracy of farmers was given first rank with highest mean value followed by too much crowd in the bank for withdrawals, lack of proper management for withdrawals on KCC, no good behaviour with farmers, lack of support from bank manager, lack of proper guidance for getting KCC, lack of awareness about the benefit of scheme, untimely available of loan, lack of availability of the agriculture officer in bank, lack of communication between beneficiaries and officers, lack of proper knowledge about loan, use of unusual words by the bank officer, bribe for making KCC and bribe for taking the loan on card.

#### Conclusion

It has been concluded that standard infrastructure facility in Agricultural Produce Market is well available to Super market owners or large farmers. Small and marginal farmers having lack of storage facility due to small amount of production and warehouse owner are unable to maintain their warehouse due to some technical aspects.

**Application of research:** A good transportation infrastructure facility was key for good marketing and it reduces the spoilage and wastage, and reduce marketing cost. Timely available credit for marketing was needed, but farmers facing many problems while getting credit from any of organisation. Proper infrastructure facility is need to overcome many types of marketing problems and is needed today.

**Research Category:** Agricultural Economics

**Abbreviations:** KCC-Kisan Credit Card

AMI-Agriculture Market Infrastructure

FPO-Farmer Producer Organization

PACS-Primary Agriculture Credit Society

SHGs-Self Help Groups

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