

FOOD GRAIN LOGISTICS: A NEGLECTED SECTOR?

Logistics is a crucial part of any business activity and every business is incomplete without it. Logistics of food grains like pulses, wheat, rice and perishable products like meat, fruits and vegetables contribute the maximum to the Indian economy. But, food grain logistics sector in India needs immediate attention of Indian government and other private authorities as millions of tons of food grains get wasted every year because of certain constraints prevalent like inadequate infrastructure, technology, transportation and storage facilities. **Ritika Arora Bhola** in line with experts explore the working of the sector, challenges faced by the industry, role of government and future

Food Grain Logistics sector is often considered as a neglected sector because of the constraints that the industry faces in terms of infrastructure, technology, transportation and storage. Every year, millions of tons of food grains get wasted due to inadequate number of reefer vehicles, poor handling strategies, lack of advanced technology to name a few. If we go by the facts, India is the second largest producer of horticulture products producing 48 million mt of fruits and 68 million mt of vegetables. India wastes as much as the total production of fruits and vegetables in the United Kingdom. There are different estimates on the quantum and value of this wastage due to lack of supporting infrastructure such as refrigerated storage and transportation. Establishing proper and integrated cool chains will take out the seasonality and perishability from the agricultural produce, lower inventories, shorten lead time required for deliveries, quickly bridge the gap between demand and supply, and provide value-added services.

In India a lot of food is lost and wasted due to lack of adequate infrastructure, however, a 2011 report by a UN body, FAO, puts wastage in fruits and vegetables as high as 45 per cent of produce (post-harvest to distribution) for developing Asian countries like India.

Infrastructure and services are important

UP has seen a large scale development of cold storage for potatoes and potato seeds. Out of a total 8.7 million ton cold storage facilities presently available in the country, UP has a 48 per cent (4.83 million ton) share followed by West Bengal (2.24 per cent). Western India has only 0.5 million ton capacity in which Maharashtra has a share of 0.35 million tons. Maharashtra has over 50 million cubic feet cold storage space in capacities ranging between 500 to 1000 mt per unit. Nearly, 80 per cent of this is privately owned. Cold storage provides location specific facility but is not linked in any manner across the country.



for growth in agri-business. In agriculture, logistic costs are greatly influenced by the bulkiness of the produce, seasonal demand and supply, and perishability of products. As the agricultural goods are generally bulky, most of their inland movement is through road transport while shipping is used for carriage across seas. The movement of perishable agricultural goods requires technical improvements such as reefer transportation for management of temperature and humidity. Appropriate road and sea transportation will have to meet this growing demand in an economic manner. The competitiveness will be greatly affected by the speed and economy with which cargo moves from factories to markets inland or ports and beyond.

Challenges

Anurag Awasthi, Founder & CEO, Save Indian Grain stresses that the shortages can be examined under three heads, namely, storage loss, transit loss, and non-issuable / damaged food grains.

As per FCI's data, the third category is negligible.

The factors contributing to the storage loss are:

- Loss in moisture
- Prolonged storage
- Poor texture of gunnies, accentuated by use of iron hooks
- Improper storage practices

The factors contributing to the transit loss are:

- Multiple handling
- Poor texture of gunnies, accentuated by use of iron hooks
- Poor quality wagons
- Enroute pilferages

- Inadequate security at rail points, especially during night working and BG/MG trans-shipment

Other Major Challenges:

According to various case studies and government reports, the food grain logistics sector is facing many challenges such as inefficient price signals, limited reach of mandis, inadequate infrastructure for storage, etc.

1. Inefficient price signals: The Indian government has been buying almost one-third of wheat and rice produced in India through the Public Distribution System, but in other kinds of grains, fruits and vegetables (both being highly perishable), the role of the government is limited. This leads to Minimum Support Price being ineffective as both price signals and as insulators from the perspective of the larger agricultural population.
2. Limited reach of mandis: Also, this procurement system has failed to cover the entire country evenly (On an average a farmer needs to travel 12 kms to reach the nearest mandi and more than 50 kms in NE India) while according to the recommendations by National Farmers Commission, availability of markets should be within a 5 km radius.
3. Too many intermediaries, information asymmetry: The above mentioned problems have led to formation of long marketing channels, with multiple intermediaries, adding to the woes of the producers of perishable agriculture goods.
4. Inadequate infrastructure for storage: The Planning Commission has recently estimated the gap between agri-warehousing supply and demand at 35 mn



Government of India has advised to frame policy/roadmap for construction of 100 LMT silos in next four years. It has also submitted that the High Level Committee constituted for re-structuring of FCI had recommended construction of silos for capacity 100 LMT. Subsequently, FCI had conducted an exercise with regards to the existing storage gap and requirement of silos for storage of wheat and accordingly, Ministry of CA, F&PD had decided that silos for capacity of 435 LMT silos will be constructed by FCI and state agencies.

Anurag Awasthi, Founder & CEO, Save Indian Grain

MT. Currently, public sector agencies like the FCI, Central Warehousing Corporations (CWC) and the various State Warehousing Corporations (SWC) have a storage capacity of 71 mn MT, while the private sector has close to 25 mn MT. To put the scarcity in perspective, food grain stocks held only by the government was 80 mn MT last year (peak) according to the FCI annual report.

5. Skewed distribution of capacity: Skewed distribution of this capacity is another issue, with North India having access to 60 per cent of the total storage infrastructure. The Planning Commission has recently estimated the gap between agri-warehousing supply and demand at 35 mn MT.
6. Lack of cold storage infrastructure: India's current cold storage capacity at 25 MT is barely sufficient for 10 per cent of fruit and vegetables produced in the country.
7. Lack of collateral management options: Collateral management refers to financing of agricultural goods stored at warehouses, and is estimated to be a ₹3,500 cr opportunity by industry sources.

Observing the same, **Devangshu Dutta, Chief Executive, Third Eyesight** reiterates, "Our storage capacity in public, cooperative and the private sector is about 109 million tonnes, which is short of the overall storage requirement. Moreover, instead of hermetically sealed or controlled environments, much of food-grain storage in India is still open to the elements and to pest infestations. This is true not only of the much-maligned government stocks of food grains, but also private storage and transportation. While many modern storage systems for food grains, including fixed installations like warehouses, indoor and outdoor silos, and flexible such as hermetic storage and silo bags have been introduced in India, they are sparingly used. It

is ironic that while millions of Indians sleep hungry, we are not showing enough regard for proper handling and distribution of our surplus or buffer stocks."

Special Care for Perishables

The concept of cold storage is not alien to agri-business in India. If we go by the facts, over the years, UP has seen a large scale development of cold storage for potatoes and potato seeds. Out of a total 8.7 million ton cold storage facilities presently available in the country, UP has a 48 per cent (4.83 mil-



lion ton) share followed by West Bengal (2.24 per cent). Western India has only 0.5 million ton capacity in which Maharashtra has a share of 0.35 million tons. Maharashtra has over 50 million cubic feet cold storage space in capacities ranging between 500 to 1000 mt per unit. Nearly, 80 per cent of this is privately owned. Cold storage provides location specific facility but is not linked in any manner across the country.

Even though India is blessed with varied ecological conditions which enable growing of all types of fruits and vegetables throughout the year, efforts at boosting the exports of fruits like mango and grapes have gone down. Same is the status of floriculture exports when viewed in global context. In each of these and other similar cases, infrastructure has been the key bottleneck. For vari-

ous reasons there are few reefer ships calling on the Indian ports. Instead, the perishable cargos move inland as well as on sea in reefer containers on feeder services connecting to the hub ports. This adds cost to the exports, adversely affects their quality and reduces the competitiveness.

Tech Power

Awasthi adds, "The solution is to develop an integrated software application linking overall production, demand, procurement and storage, keeping in view the associated regions and infrastructure available. The system will create most optimal location network of grain storage, minimising travel distance for storage as well as distribution. Such integrated software system is the key to building an efficient grain storage network. The financial institutions, technology, consumer markets and infrastructure move along with structure of society. The change of joint family to nuclear families has forced these to change from hub and spoke model to distributed architecture. Therefore, rather than one big bank, we now have thousands of ATMs; intelligence is stored in clouds rather than in one big computer; and home deliveries take care of our requirements, instead of one big shop. Similarly, the grain storage infrastructure architecture also needs to change. From several hundred big storage spaces, the architecture needs to move into several thousand small godowns close to farmers and distribution spots."

He continues, "The second intervention of technology is needed in the storage infrastructure itself. Today, new-technology steel silos and silo bags are available, whereby the life and safety of grain are enhanced multiple times by creating modified atmosphere of low oxygen and high CO₂. Through these technologies, one can create smaller stor-



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age of 2,000 tonnes per bag next to farmers, taking only 1/10th of an acre of land. It is the most chronic supply chain problem ever.”

Government Initiatives

Awasthi shares, “Government of India (GoI) has set up a High Level Committee (HLC) in August 2014 with Shanta Kumar as the Chairman, six members and a special invitee to suggest restructuring or unbundling of FCI with a view to improve its operational efficiency and financial management. GoI also asked HLC to suggest measures for overall improvement in management of food grains by FCI; to suggest reorienting the role and functions of FCI in MSP operations, storage and distribution of food grains and food security systems of the country; and to suggest cost effective models for storage and movement of grains and integration of supply chain of food grains in the country.

The HLC had wide consultations with various stakeholders in its several meetings in different parts of the country. It also invited comments through advertisements in newspapers and electronic media. HLC would like to gratefully acknowledge that it has benefited immensely from this consultative process, and many of its recommendations are based on intensive discussions with stakeholders.”

Roadmap to the Future

According to Awasthi, Government of India has advised to frame policy/roadmap for construction of 100 LMT silos in the next four years. It has also submitted that the High Level Committee constituted for re-structuring of FCI had recommended construction of silos for capacity 100 LMT.

Awasthi elaborates, “Subsequently, FCI had done an exercise with regard to the existing storage gap and requirement of silos for storage of wheat and accordingly, Ministry of CA, F&PD had decided that silos for capacity of 43.5 LMT silos will be constructed by FCI and state agencies. In view of the directions of the government, present strategy is to make a roadmap for construction of 100 LMT silos in next four years in a phase wise manner as the actual requirement of silos is dependent on existing storage capacity, stocks in central pool and the resultant storage gap. The Silo strategy is also dependent on the government policy with regards to Direct Benefit Transfer which was also one of the recommendations of the High Level Committee for restructuring of FCI. Already, the government is implementing the DBT Scheme on a Pilot basis in the UTs of Chandigarh, Puducherry, Dadra and Nagar Haveli. Thus, in case there is a change in the procurement and distribution

policy under NFSA/TPDS, creation of capacity that might not be required with a financial commitment for 30 years will need to be reviewed and evaluated with regard to the financial implications of the same.”

He adds, “In view of this, it has been planned to undertake construction of silos in a phase wise manner. A three phase approach has been adopted which ensures that if needed, we can have the creation of 100 LMT of silo capacity in four to five years and at the same time we have the flexibility to limit the construction of silos to capacity that is actually needed and financially viable.”

Agreeing with Awasthi, Dutta concludes on a positive note by saying, “Although many private players are expressing interest in the area, more participation of the private sector is dependent on projects being modeled as viable businesses with timely returns and lower (or better managed) risk, as well as optimum capital and operational costs. Indigenous and traditional techniques also need to be improved, and affordable technologies need to reach the farmer. With the government’s push towards processing, changing consumer needs, and developing business interests in both domestic and export markets, the standards of storage need to improve dramatically. It is important to remember that, while food safety and hygiene standards may be applied to finished, packaged products, the quality standards that are finally achieved start getting determined from procurement and storage onwards. Other than private storage capacities, it is imperative that the government’s storage capacities are upgraded. The lakhs of tonnes of wheat, rice and other grains that get spoiled each year can literally feed millions. Not only will investment in modern storage will add percentage points to the country’s GDP, it will bring a mass of Indians closer to the basic dignity that they need and deserve.”