RECOMMENDATIONS
Elements of supply chain play an crucial and deciding role in any organization be it service industry, manufacturing unit or an huge Government Organization such as Food Corporation of India (FCI) and the state government related agencies engaged in the challenging tasks of distributions of food grains to the targetted segment of the society which helps in ensuring the food security which is a step towards the concept of National Food Security i.e NFS.

Although in general parlance it is strongly felt that the Targetted Public Distribution System is suffering from system failure and diversion of food grains meant for the poor and food grains are diverted elsewhere instead of reaching it to the entitled needy citizens of India.

Similarly Food Corporation of India (FCI) has also and always been on the target of one and all for many reasons and specifically for being responsible for damages to the valuable food stocks of the nation.

In recent times due to the wide reach of print and electronic media various aspects of TPDS and FCI have been expressed to the population at large and it is felt that there has to be certain and effective changes for ensuring the supplies of food grains to TPDS / consumers/ beneficiaries.

The present study was focused specifically on the elements of supply chain being practiced in Food Corporation of India and in the state run distribution network of Fair Price Shops aimed at making the supplies of food grains efficacious to the Targetted Public Distribution System.

After having analysed the various aspects of the subject of study the following points have emerged and on which action is needed to achieve the objective of making the efficacious supplies of food grains to the Targetted Public Distribution System (TPDS).

- Procurement
- Storage
- Movement/ Transportation
- Distribution Network
• Usage of Information and Communication Technology and related modern systems.
• Other related factors concerning supply chain management.

Procurement

• Direct payment to farmers should be made if arthiya system is to be avoided and let the farmer and Mandi Board to perform the services of Arthiyas.
• Rationalization of taxation structure/ levies by State Governments is the need of the hour.
• Ensuring payment of MSP to farmers through clear audit trail.
• Adequate measures to check the recycling of food grains is a must.
• Differential MSP for various States, based upon the cost of input and tax structure may be explored to encourage productions and procurement in deficit States.
• In order to encourage farm level storage, MSP may be extended beyond normal procurement period also.
• Actual period of procurement is very short in Punjab and Haryana due to use of mechanized harvesting. Farmers may be motivated to deliver food grains in staggered manner with appropriate incentives to be built in.
• Significant proportion of food grains brought to mandis has high Moisture content, hence on one hand farmers are to be educated and on the other hand the drying facilities be created in the mandis for ensuring quality parameters.
• In compliance to Jute packing order, the foodgrains is packed in gunny bags only leading to mismatch between supply and availability. In case of shortages, HDPE/PPE bags be used for packing the food grains
• Crop diversification is very helpful taking into account the MSP (Minimum Support Price) for pulses, water level, soil fertility
• Adopting more modern techniques for cultivation and harvesting.
• Electronic direct disbursral of payments to all concerned for traceability.
Government of India Related Factors.

- Development of food processing units to encourage diversification of crops and also to ensure food security and commercial viability by bringing down costs associated with wheat and rice especially for Punjab and Haryana.
- Area / region specific approach for development of agriculture especially in potential states.
- Incentives to State Governments for increasing production / procurement under Decentralized system of Procurement (DCP) which will cut down transportation etc.
- Strengthening of micro financing system for farmers such as kissan credit card, Co-operative credit societies / Self-help groups at village level etc...
- Permanent mechanism for market intervention in Domestic and International markets for price stabilisation and liquidation of surplus inventory to cut down carrying cost & losses.

Storage / Warehousing

Storage by the farmer:

- Farmer may store the food-grains, at his own facility irrespective of the quantity and farmer can be compensated by paying additional amount.
- Quantity stored can be certified by Gram Panchayat by a cut off date.
- Facility of loan by Banks on basis of certification can be motivating and viable factor for farmers.

The above option of storage by farmer will help in creation of additional storage space without any extra expenditure and Saving of Commission being paid to Arthitha in case farmer brings the produce directly to FCI.

Other storage related factors

- The old existing SILOs with FCI be renovated through appropriate PPP model.
- New SILOs having capacities more than 50000 Mts may be constructed in the producing/procuring states linked to the consuming areas as Hub & Spokes model for better inventory management and to meet the storage gap.
- The existing conventional godowns may be automated for cutting down the handling cost and also to overcome the perennial problem of Labour.
- Introduction of Ware House Management System for reducing cost in inventory management and streamlining operations.

Fig: Comprising of Silo Vs conventional godowns.

<table>
<thead>
<tr>
<th>Silos</th>
<th>Conventional Godowns</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Procurement Stage</strong></td>
<td></td>
</tr>
<tr>
<td>• Transportation in Bulk</td>
<td>• Transportation to Receive the stocks in bagged form</td>
</tr>
<tr>
<td>• No usage of Gunnies</td>
<td>• Gunny used</td>
</tr>
<tr>
<td>• Less handling &amp; Manpower</td>
<td>• Handling involved &amp; More Manpower</td>
</tr>
<tr>
<td>• Primarily mechanised</td>
<td>• Primarily Manual</td>
</tr>
<tr>
<td>• Better price &amp; delivery to farmers</td>
<td></td>
</tr>
<tr>
<td><strong>II. Storage Stage</strong></td>
<td></td>
</tr>
<tr>
<td>• Less Manpower</td>
<td>• More Manpower</td>
</tr>
<tr>
<td>• Almost nil storage loss</td>
<td>• More Storage loss</td>
</tr>
<tr>
<td>• Easy maintenance</td>
<td>• Cumbersome maintenance</td>
</tr>
<tr>
<td>• Maintenance of quality for Longer period</td>
<td>• Maintenance of quality for Lesser period</td>
</tr>
<tr>
<td><strong>III. Dispatch Stage</strong></td>
<td></td>
</tr>
<tr>
<td>• No bags involved</td>
<td>• Bags involved</td>
</tr>
<tr>
<td>• Direct loading</td>
<td>• Loading with labour</td>
</tr>
<tr>
<td>• Chances of DC are rare</td>
<td>• Frequent DC occurs</td>
</tr>
<tr>
<td>• No transportation at receiving end.</td>
<td>• Transportation/ handling involved at both the ends.</td>
</tr>
<tr>
<td>• Almost nil transit loss</td>
<td>• More transit loss</td>
</tr>
</tbody>
</table>
Modernization of Logistics

- Special Vehicles to carry bulk food-grains from mandi to Silos and silos to railway sidings.
- Mechanized loaders will load bulk from vehicles to wagons.
- Tackling the storage space crisis
- Creation of additional storage space such as underground storage space at Mand yards in Punjab and Haryana where food grains are purchased by agencies after quality check with multiple inlets and common outlet where from dispatches can be made in either bulk or bagged form.
- The option of bulk silos for future storage requirements under PPP mode, may be expanded.
- End-to-end bulk storage solution including creation of storage capacity at farm and port level be initiated.
- The NABARD scheme of financing for Rural Storage Silos/ farm bins/ brick structures should be fully utilised.

Movement:

- Railway should give priority for movement of food grains during peak procurement seasons.
- FCI may also adopt two shift systems at railheads to ensure early loading and release of wagons
- It is also proposed that dedicated wagons may be got manufactured for FCI to the extent of at-least 10% of total requirement, preferably through PPP mode to meet emergent situation such as peak procurement season or natural calamities.

Distribution:

- Development of storage facilities at Block / Panchayat level for TPDS to handle stocks in bulk and bagged form
- Rationalization of tax structure related to procurement in Punjab and Haryana to bring down costs and prevent cross border movement across states.
The lifting of food grains by the state govt in the absence of mechanisms like bio-metric verification and outdated records leads to chances of diversion of foodgrains from the TPDS. This diversion may also get recycled. Hence to avoid this a strong fool proof mechanism to be evolved.

State Govt. should link beneficiary with bio-metric base like Aadhar Card along with computerization of TPDS records for online verification.

The Ration cards may be issued as per the latest Census to overcome the problem of Bogus cards and also to make the foodgrains available to the actual deserving beneficiaries resulting in enhancement of allocation.

Distribution can be allocated by prior intimation of demand to optimized the labour usage by rotation of labour force.

It is crucial to share the burden of storage by state agencies and TPDS shops by lifting the stock for requirement of 3 months at least under TPDS which will also avoid repetitive handlings.

The State Governments must be prepared for handling the FCI supplies in bulk because end to end system of supply chain in Bulk is cheaper than handling the stocks in bagged form and similar is applicable for storage in Bulk as well.

Traditionally FCI has been storing wheat & rice in covered godowns.

The cost comparison of storing wheat in Silos and Flat structured godowns is:

<table>
<thead>
<tr>
<th>Cost Element (per MT)</th>
<th>Conventional Godown</th>
<th>Silos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>Rs. 660/- p.a.*</td>
<td>Rs. 1500/- p.a. #</td>
</tr>
</tbody>
</table>

Savings in case of Silos:

| Cost of Gunnies | Rs. 780/- (in case of final distribution in bags, gunny would be required at last stage only.) |
| Handling & Tpt. Charges (at procurement & dispatch) | Rs. 400/- |
| Handling charges at receipt centre | Rs. 200/- |
| Net Savings     | Rs. 540/- |

Exhibit 50 173
Modern Exchange System / Information and Communication Technology related:

- Information and Communication Technology related issues are to be resolved of top priority concerning hardware or software so that flow of information is uninterrupted and timely for decision making.
- It is to be strictly ensured that correct and updated data is fed in to various modules timely to have correct picture of inventory and other related issues.
- Decentralization of decision making process with the help of ICT & is need of hour.
- The Information and Communications Technology related modern exchange systems are to be integrated with state government machinery meant for Targetted Public Distribution System (TPDS), network of Fair Price Shops, Consumer related portals, Public Information System, Railways and agencies which are meant for checks & balance in the system.
- By usage of modern exchange system / ICT, the receipt and issue of food grains in godowns and other operations during the storage can be directly connected with IRRS (Integrated Rapid Reporting System) through Electronic Lorry Bridge. This is to rule out any malpractices and to ensure transparency.

The above interconnectivity will ensure the transparency, efficiency and speed in the system for delivering the results and duties for which it is meant.

The moot point is ‘to watch’ each other by anyone who is part / element of food grains supply chain management system which in turn becomes efficacious in the national interest.

Keeping in view the various elements of supply chain a proposed Supply chain model for wheat in Bulk is depicted below.
Proposed Supply chain model for wheat in Bulk

Wheat brought directly by Farmers to Silos declared as Mandis by State Government  

Mechanised Transfer to Silos after quality inspection

Movement of stock by specialized wagon to consuming Region as per need

Transportation

Issue to State Agencies responsible for distribution in bulk

Issue to block/mandals/FPS

Recommendation General:

Some of the general / recommendations are:

- Issue of handling labour to control unsavory strikes is crucial for cost cutting of effective handling of food grains.
- Stringent physical verification measures should be excercised.
- Recruitment of staff as per Sanctioned Strength (especially Cat. III level) and also considering the retirement profile for motivation of employees.
- A separate commercial arm of FCI for export and import operations will take care of subsidy burden and excess inventory.
- The concept of NWR (Negotiable Warehouse Receipts) to be explored by the Government so as to empower farmers to get easy credit from banks
Efficient Human Resources Management is the need of hours as manpower has declined considerably in the recent past while the storage of food grains and quantum of operation has considerably increased.

- Engaging staff and officers associations to resolve issues to ensure redressed of grievances and proper working environment to allay fear of vigilance cases.

- Dealing with indiscipline in objective and firm manner

- Private enterprises should play important role in creation of modern storage capacities.