SMART WAREHOUSING FOR EFFICIENT COMMODITY MARKET IN INDIA

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Abstract: Commodity marketing in India presently suffers from deficiencies in its supply chain, resulting in high carrying cost and heavy losses mainly due to poor and insufficient storage and transport facilities. The emerging problems of increasing stakeholders demand, complexity of SKU (store keeping unit), large volumes and pressure of quick response with the acute infrastructural shortage and sub-standard processing, handling, value-addition technology etc. have exposed the poor state of Indian warehousing industry. The current developments in economy and e-business growth are forcing the supply chain experts to turn towards warehouse driven solution for enabling Direct-to-Store approach. The upgraded multi-commodity warehouses will facilitate efficient delivery driven commodity marketing, connective trade practices, private participation and rural banking & finance to prompt supply of commodities across the demographic destinations. The paper gives a justification to up-gradation of multi-commodity warehousing by elaborating its expected benefits to the participants. The big challenge is to upgrade traditional and unorganized warehousing sector to meet the expectations and deliver the promising global business solutions. The Next Generation Warehouses need to be attainable & accurate, scalable & specific, realistic & responsive, mechanized & measurable and timely & transferable. These smartly operating multi-commodity warehouses with a digitalized receipt system will uplift the stakeholders' confidence and participation level. The physical market and virtual platform need an in-built e-NWR (electronic negotiable warehouse receipt) integration to achieve success through warehousing. A transparent, well connected, warehouse-linked and cost effective supply chain for multi-commodity and derivative market operations using e-NWR and attached with the courtyard of warehouses declared as 'mandi' (delivery point) can facilitate an efficient commodity market in India.

Keywords: Commodity Market, Electronic Negotiable Warehouse Receipt, Smart Warehouses, Integrated Multi-Commodity Warehouse.

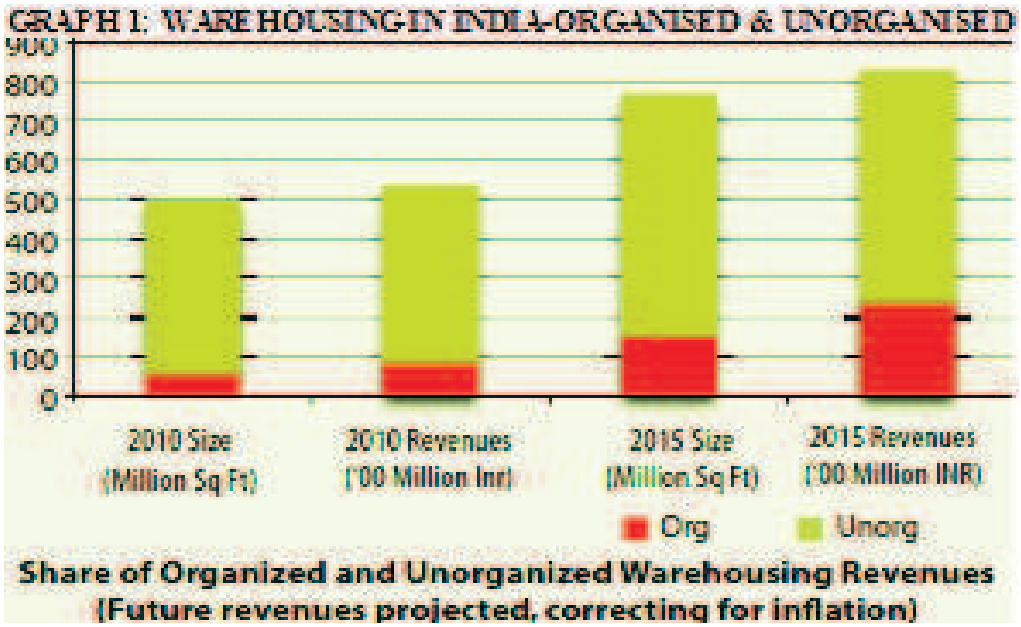
Introduction: Commodities are the core strength for different sectors of Indian economy supporting a large part of population for their income, employment and livelihood. Its efficient functioning will ensure overall development and inclusive growth of the economy. To facilitate regular and timely flow of large volumes of essential commodities to the length and breadth of the country, warehousing forms a critical component of the marketing system. Proper functioning of multi-commodity warehousing and its integration with other marketing functions will only guarantee the commodities reaching the market efficiently.

In developing countries more than 40% of food losses occur at post-harvest and processing levels [1]. According to estimate of FAO (2011) up to 20 per cent of the grain never reaches consumers because of poor post-harvest handling [2]. Food Corporation of India (FCI) report shows that food grain worth Rs. 120.29 crore ($19.2 million) was lost in storage, while Rs. 106.18 crore ($17 million) worth of grain was lost in transit. The remaining Rs. 9.85 crore ($1.5 million) worth of food grains were not fit for human consumption [3]. India, the world's largest producer of milk and second largest producer of fruits and vegetables, is also one of

the biggest food wasters in the world, wasting Rs. 440 billion worth of fruits, vegetables and grains every year [4].

Current Scenario: The size of the Indian warehousing industry (across commodities and modes) is pegged at about Rs. 560 billion (excluding inventory carrying costs, which amount to another Rs. 4,340 billion). The industry is growing at over 10% annually. Warehousing forms a crucial link in the overall logistics value chain. It accounts for 5% of the Indian logistics market (excluding inventory carrying costs, which amounts to another 30%) [5].

The proportion of organized and unorganized warehouses is given in Graph 1



[6]. Almost 85% of the market is dominated by unorganized players, while 70-75% of the organized market is being controlled by PSUs such as Central Warehousing Corporation (SWC) units. The current capacity of the organized warehouses, controlled by corporations, cooperative and private sectors, is 108.75 MMT, of which the private sector has only 18.97 MMT, while public private partnership (PPP) is yet to start off in the sector [7].

Why an Upgraded Warehousing?: The Report of Working Group (GOI 2011) has endorsed the expansion of Private Entrepreneurs Godown (PEG) 2008 Scheme and Gramin Bhandaran Yojana to construct/renovate scientific storage capacity with allied facilities in the rural areas [7]. It has given recommendations for Negotiable Warehouse Receipts, Incentive based Procurement, and Warehouse based Mandi etc. Further an allocation of Rs. 2000 crore for setting up of warehousing infrastructure in the country under the RIDF (Rural Infrastructure Development Fund) is proposed [7]. The modern and scientific multi-commodity warehouses and Negotiable Warehouse Receipt can be helpful for the agriculture sector at micro level and macro level both in many ways such as:

a) **Supporting trade practices:** The overall logistical cost can be reduced by way of materials consolidation, breaking bulk materials, process customization, and storing with the warehouses. It enables commodities with specifications to be assembled at convenient locations; the system facilitates trade by

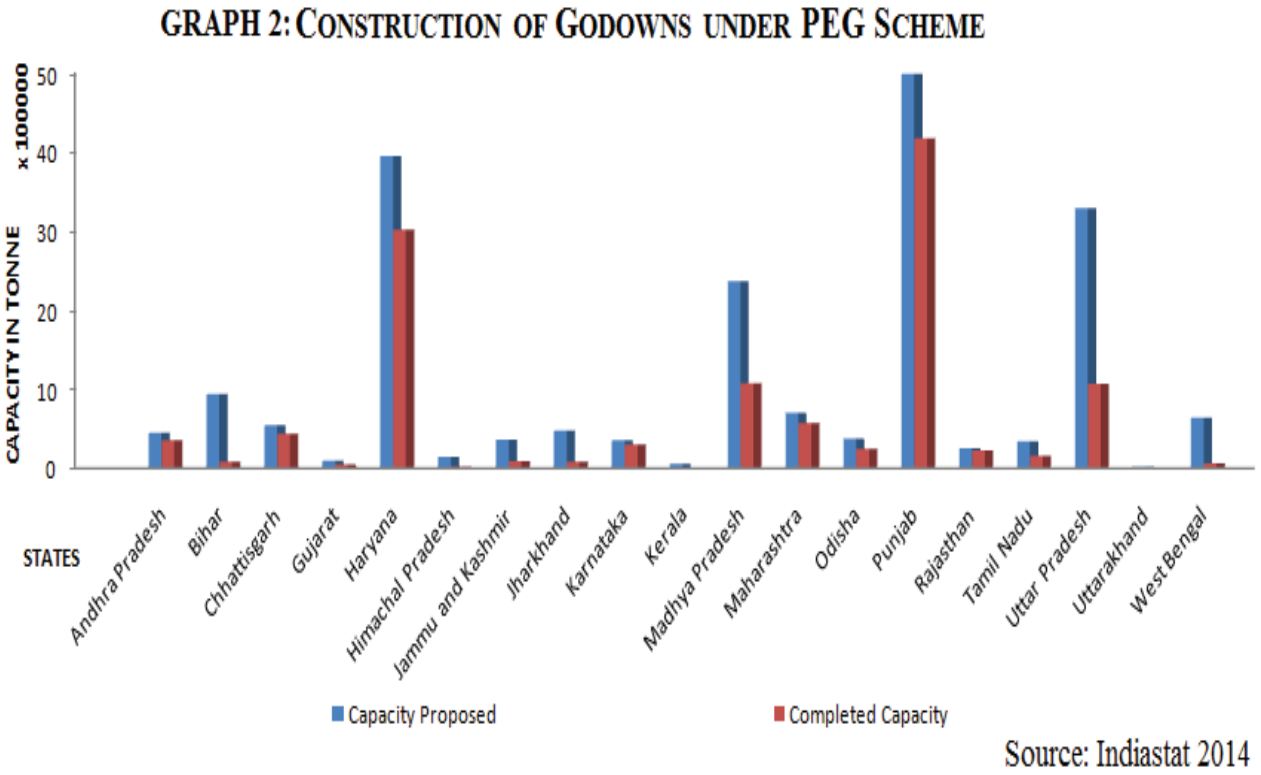
providing symmetric information between interested parties. The availability of crucial information on inventories availability can reduce cost of trade for buyer and seller. The warehouse and NWR system guarantees delivery based commodities matching with stated date and quantity specified. The third party surety can give relief to the buyer and seller. The modern and efficient system encourages participation of farmers, traders, investors, retailers, bankers, brokers, exporters, corporate houses, small and medium entrepreneurs, stockists etc. by creating a synergic business environment.

b) **Efficient Marketing:** The application of multi-commodity warehouse based delivery will expand marketing reach and promote a transparent trading of commodities by building a strong business connection between producers, traders, processors, farmers, etc. This will reduce the length of marketing chain and minimize operational cost. Further, the immediate need of cash can be met by inventory credit. The multi-commodity storage makes stakeholders utilize the available resources strategically with minimum price variability both for the producers and the consumers. It brings zero defects/ zero waste to improvise quality and reduces the waste and loss from production to distribution.

c) **Private Participation**: The efficiency of warehousing will reach to next level with the entry of private players in the monopolistic warehousing industry. They can create enormous opportunities with their rich expertise and speedy decision making. The demographic advantage can be tapped with customized multi-commodity warehousing solutions and turning the threat of wastages into opportunity with the help of controlled waste management. The quality and efficiency may go hand in hand with the entry of competitive private players. The progress of warehousing infrastructural growth through PEG is depicted in Graph 2 [8].

d) **Rural Financing:** By accepting commodities as deposits from small farmers and traders, the warehousing will boost trade transactions, facilitating banks in evaluation of loans based on dedicated multi-commodity value database. The quality of lending through collateral can mitigate credit risks and thus attract participation of banks. The monitoring of market price movement, valuation analysis and VAR (Value at Risk) margin based price-risk management can improve the lending pattern in Indian agriculture. Lenders can give credit rating based on warehouses' loan performance and there is no longer a need to evaluate large number of small borrowers. The minimization of operational cost on monitoring the rural lending will strengthen rural business and develop a seamless funding support to rural India.

Smart Multi-Commodity Warehouses: The supply chain essentially focuses on reducing blockages and streamlining the value chain and stock movement by reducing inventory load. Its emphasis is basically on eliminating or at least minimizing the warehousing and the carrying cost. The philosophies get changed in a completely networked business environment with the prevalence of e-commerce,



customized production, demand driven delivery, real time approach and integrated supply chain. These changes are putting pressure on policy makers to respond to customer needs in globalized settings, improved connectivity and ease of communication. The warehouses are consolidation centers for serving multi-commodity, multi-locations, cross docking for distribution, sorting centers for door delivery and assembly facility for bundling, kitting and fabrication. The global competition turns supply chain into a strategic arm which should ideally make it attainable & accurate, scalable & specific, realistic & responsive, mechanized & measurable, and timely & transferable, through Negotiable Warehouse Receipts (NWRs). The smart multi-commodity warehouses with NWRs should have the following features:

The most critical drivers for better warehousing facilities are increasing demanding customers, increasing SKU (store Keeping Unit) complexity, causing increased volumes, and an increasing demand for quick response from companies [6]. A smart multi-commodity warehousing should address and respond to all these challenges by a built-in arrangement.

Integrating by e-NWR: The warehousing does not operate in isolation. It functions in collaboration with other supply chain components in a micro and macro setting of the economy. The issues related with its integration with the rest of the system are vital in its smooth and successful performance.

The implementation of Electronic Negotiable Warehousing Receipt (e-NWR) can make the scalability of multi-commodity transactions. The application of e-NWR will reduce the cash subsidy burden by digital

SMART MULTI-COMMODITY WAREHOUSES & ENWR		
S	Scalable & Specific	Multi-Commodity Warehouses and NWR must be built with specific goal and to cater for long term needs. The clarity in whom to target, what to accomplish, where to serve, when to execute, what is required or a constraint, and why to target will enable to spread across multiple facilities.
M	Measurable & Mechanized	The progress must be measured towards the accomplishment of specified jobs. It should be mechanized with modern equipment and operated through multi-commodity warehouse management information system.
A	Accurate & Attainable	The multi-commodity warehouse and NWR are based on zero-defect by developing skills, expertise, attitude and capacity to enable absolute perfection in delivering. The practice of multi-step process with quality checks and balances will improve safety measures and reduce the hazards.
R	Responsive & Realistic	Idea is to establish process and procedures, which have operational feasibility to cater and compete. The structure should be agile and motivated. The centers of excellence are desired with forward planning and quality orientation for all the stakeholders. The image of trustworthiness will ease the operation complexity and create loyalty among internal and external participants.
T	Timely & Transferable	The fast, seamless and timely solution is the key to success in the warehousing industry. The process should be designed with optimum utilization by smooth multi-commodity transportation, mechanized loading and unloading with proximity to market. The ownership and title transfer should be with the click of time.

The most critical drivers for better warehousing facilities are increasing transfer of commodities using e-NWR to marginal or deprived population of the country. The warehouse linked PDS (Public Distribution System) may be converted into direct electronic transfer. Through e-NWR the coverage of direct benefit will enrich all stakeholders in their respective areas of operation.

The multi-commodity warehouses are expanding across the nation for diverse kinds of commodities with heterogeneous stakeholders. This gives a tough and challenging task to the regulating agencies especially under conflict of interests among stakeholders, uncertain upcoming environmental shocks, political instability and changing global trend. The physical delivery and settlement in multi-commodity and derivative market with a well-connected e-NWR system is yet another milestone to facilitate process driven warehouses with professional framework.

Conclusion: The present state of unsatisfactory performance of warehousing is alarming. The supply chain demands a multi-commodity warehouse driven solution for enabling Direct-to-Store approach for ensuring supportive trade practices, efficient marketing, private participation and providing risk free rural banking and financing through uninterrupted

supply of commodities across the destinations. Next Generation Multi Commodity Warehouses need to be attainable & accurate, scalable & specific, realistic & responsive, mechanized & measurable and timely & transferable. These smartly operating multi-commodity warehouses with e-NWR system will uplift the stakeholders' confidence and participation.

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