

IMPORTANCE OF SUPPLY CHAIN MANAGEMENT IN PADDY PROCUREMENT AND ITS DISTRIBUTION SYSTEM IN CHHATTISGARH

Ila Dixit¹, Dr. B. C. Jain², Abhishek Kumar Jain³

¹Assistant Professor, Department of Management, Kruti Institute of Technology and Engineering, Raipur

²Principal, Kruti Institute of Technology and Engineering, Raipur (C.G.) 492001, HOD, Department of

³Mechanical Engineering, Kruti Institute of Technology and Engineering, Raipur (C.G.) 492001,

E-mail :- manit.abhi@gmail.com, ila.dixit1@gmail.com, bcjain63@rediffmail.com

ABSTRACT

Supply chains are principally concerned with the flow of products and information between supply chain member organizations—procurement of materials, transformation of materials into finished products, and distribution of those products to end customers. Today's information-driven, integrated supply chains are enabling organizations to reduce inventory and costs, add product value, extend resources, accelerate time to market, and retain customers.

The real measure of supply chain success is how well activities coordinate across the supply chain to create value for consumers, while increasing the profitability of every link in the supply chain. In other words, supply chain management is the integrated process of producing value for the end user or ultimate consumer.

Various innovative methods of reducing leakages and diversion have been tried in the country including bar-coded food coupons, food stamps, biometrically coded ration cards etc. None of these have been entirely successful. . In the State of Chhattisgarh an end to end solution based information technology has been developed and implemented with very encouraging results. Strategy for use of ICT to check diversion in the delivery mechanism, as well as its implementation is discussed in the following sections.

Keywords: PDS, diversion, paddy, CMR, milling, Chhattisgarh

1.Introduction

A processing-based and organized agri-supply chain functions as a part of a very complex network. Figure-1 depicts a generic supply chain at the organization level within the context of a complete supply-chain network. Each firm is positioned in a network layer and belongs to at least one supply chain, i.e. it usually has multiple (varying) suppliers and customers at the same time and over time.

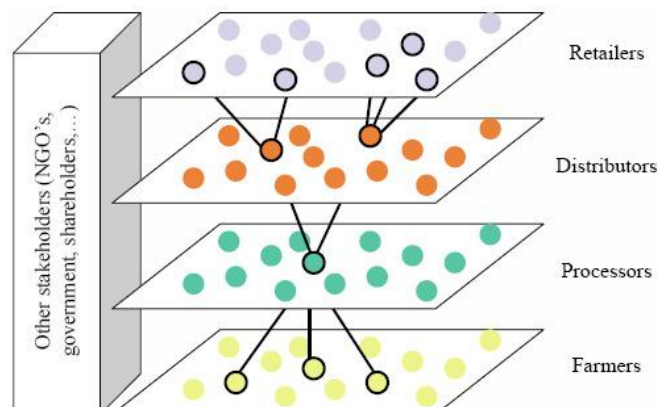


Fig- 1: Schematic Diagram of Supply Chain

Components of an Agri supply chain

Agribusiness, supply chain management (SCM) implies managing the relationships between the businesses responsible for the efficient production and supply of products from the farm level to the consumers to meet consumers' requirements reliably in terms of quantity, quality and price. In practice, this often includes the management of both horizontal and vertical alliances and the relationships and processes between firms.

Agri-supply chains are economic systems which distribute benefits and apportion risks among participants. Thus, supply chains enforce internal mechanisms and develop chain wide incentives for assuring the timely performance of production and delivery commitments. They are linked and interconnected by virtue of shared information and reciprocal scheduling, product quality assurances and transaction volume commitments. Process linkages add value to agricultural products and require individual participants to coordinate their activities as a continuous improvement process. Costs incurred in one link in the chain are determined in significant measure by actions taken or not taken at other links in the chain. Extensive pre-planning and co-ordination are required up and down the entire chain to affect key control processes such as forecasting, purchase scheduling, production and processing programming, sales promotion, and new market and product launches etc.

Following are the components of an organized agri- supply chain:

1. Procurement or sourcing
2. Logistic management
 - a. Transportation
 - b. Material management
 - c. On the premise of supplying mostly from production not stock
 - d. Warehousing
 - e. Logistics Network modeling
3. Organizational management
 - a. Contracting
 - b. Strategic alliances and partnerships
 - c. Vertical integration
 - i. Long term storage
 - ii. Packaging technology
 - iii. Cold chain management
 - iv. Energy efficient transport
 - v. Quality and safety
4. Application of Efficient Consumer Response (ECR) System
 - a. Electronic scanning of price and product at the point of sale
 - b. Streamline the entire distribution chain

Automation of Paddy Procurement structure in Chhattisgarh

This paper discusses policy adapted in using ICT to direct diversion and leakage in the delivery mechanism and its thriving function in automation of food grain supply chain. In 2016-17, Government of Chhattisgarh computerized whole food grain supply chain from procurement of paddy at around 1600 purchase centers to transportation of PDS commodities to 10500 FPS for further distribution 3.5 million ration card holders, covering 6 different organizations. As an outcome of the project, 0.80 Million farmers have received computer generated cheques without any delay. Citizen participation has been increased in monitoring PDS. Outcome of the project, Challenges faced are discussed.

Two important schemes of Government of India - paddy procurement at Minimum Support Price (MSP) and Public Distribution System (PDS) - cover the whole food grain supply chain. The two schemes are described here.

- **Procurement of paddy at Minimum Support Price (MSP)**

70% of population of India lives on agriculture. Majority of the farmers are medium and low income group and require selling their produce immediately after production because of mainly two reasons. These farmers do not have adequate storage facilities to store the produce and these farmers require money at the earliest as they have to repay the loans taken for purchasing seeds, fertilizers etc. To check this type of practice and ensure farmers get proper price to their produce Government of India operates a scheme to purchase farmer's produce in the season at MSP.

In Chhattisgarh (one of the states in India), main agricultural produce is paddy. 2.966 million Families live on farming in Chhattisgarh out of which 1.522 million families are small farmers (having less than 2 hectares of land). Government of Chhattisgarh procures paddy in Chhattisgarh on behalf of Government of India. This scheme benefits about 1 million farmer families by procuring about 3 million metric tons of paddy in the Kharif Marketing Season (KMS) of a year, spending about 24000 Million Indian Rupees. (600 Million US Dollars). The procurement takes place through about 1333 Primary Agricultural Societies in the whole state covering geographical area of 135000 Sq. KM. The paddy procured is converted into rice by millers after entering into an agreement, Rice is then handed over to Chhattisgarh State Civil Supplies Corporation to use it in another important scheme for providing food security to the poor i.e. Targeted Public Distribution System.

- **Targeted Public Distribution System (TPDS)**

TPDS is a Government of India's scheme to provide food security in the country. Under this scheme every Below Poverty Line (BPL) family gets 35 KG rice per month at a subsidized rate of Rs 6.25 per KG. According to this criterion there are about 2.4 Million BPL families in Chhattisgarh. Government of Chhattisgarh further augmented this scheme to give 35 KG rice at Rs 3 to about 3.7 million families. Thus GOI and Government of Chhattisgarh spend about 2500 million Indian Rupees every year as a subsidy to operate this scheme for the benefit of 3.7 Million BPL families.

Diversification System

The main objective of total food grain supply chain computerization in Chhattisgarh is to check this diversion. The diversion takes place in three main areas.

1. Diversion in the procurement itself.
2. Diversion in the movement of commodities between CGSCSC warehouses.
3. Diversion while transporting to FPS from CGSCSC warehouses.
4. Diversion at the FPS level.

Computerization of paddy Supply Chain

The case study is complete process computerization of food grain supply chain in Chhattisgarh from paddy procurement from farmers, its storage, milling and distribution of rice and other commodities to 3.7 million ration card holders through 10,416 Fair Price Shops (FPS). As a part of this project, 1532 Paddy procurement centre's, 50 storage centre's, all district offices concerned, 99 Civil Supplies Corporation distribution centre's and 35 FCI rice receiving centre's have been computerized covering six different organizations involved in food grain management viz. Department of food,

Marketing Federation(MARKFED), CG State Civil Supplies Corporation (CGSCSC), Food Corporation of India (FCI), Central Cooperative Bank and Primary Agricultural Cooperative Societies(PACS). Purchase and issue at paddy procurement centre's including generation of cheques has been computerized. Miller's registration, Agreement with millers and generation of Delivery Orders etc. are computerized. 3.7 Million Ration card holders database has been prepared. Calculation of monthly allotment to FPS has been automated. Call centre with a toll free number 1800-233-3663 is operational from 8:00 AM to 10:00 PM to take complaints from citizens and give any desired information about paddy procurement and public distribution. Citizen interface web site is hosted to increase the citizen participation in controlling diversion of PDS commodities. The project can be described in four distinct areas which complete the process computerization of whole food grain supply chain and its monitoring.

1. Paddy Procurement and Milling

All operations carried out by the district level offices such as collector office, DMO of MARKFED and DM of CGSCSC as well as head quarters are computerized through web based applications. At all the 50 storage centres of MARKFED, 2 computers each were installed with a form based module to receive and issue paddy. 70 Custom Milled Rice (CMR) receiving centres of CGSCSC (subset of 99 distribution centres) and 35 CMR receiving centres of FCI are using a web module to generate sample slip, analysis report and acknowledgement report

2. Unified Ration Card Database and issue of PDS commodities to FPS

Unified Ration Card database has been prepared. The ration cards are printed using the database. Only those ration cards having a unique number and a barcode printed through that database, are valid now in Chhattisgarh. The truck challan is also generated using the web application. Thus information regarding allocations, stocks, issue and sales for each FPS is now available on the central server. At least 10% of this data is physically verified by the staff of the food department every month, and action is taken against any FPS giving false declarations.

3. Citizen Participation web-site

Citizen awareness and participation in the public delivery system is a major check against diversion and leakage.

4. Call centre and Complaint Monitoring System

A call centre with a toll free number 1-800-233-3663 is operational. The complaints received by call centre are immediately entered in the system and the complaint number is given to the complainer for further use.

Challenges faced in execution the project

1. Lack of connectivity at paddy procurement centers.
2. Unreliable Power Supply at procurement centers.
3. Massive data entry of beneficiary details in Ration card database.
4. Font compatibility for Hindi data

2.Conclusion

Use of technology in delivery mechanism can definitely reduce corruption when used in a strategic way. The technology itself cannot check corruption. The technology should be used to create transparency combined with a convenient system for a citizen to lodge complaints with confidence that the complaint will be attended to. Manual methods should be replaced by computerizing processes. Data should be captured as and when they are generated instead of developing MIS

applications for entry of data after manual processes are followed. Commitment of higher authorities, Capacity building in the operating personnel and connectivity are the 3 essential things for success and sustainability of any eGovernance project.

3.References

- [1]. <http://agridept.cg.gov.in/agriculture/statistics.htm>, accessed on 02.08.2008
- [2]. India Corruption Study 2005 done by Centre for Media Studies, Transparency International India
- [3]. Shilpa k., 2008 “Supply Chain Management in Vegetable Marketing: a Comparative Analysis” MBA Thesis University of Agriculture, Dharwad India.
- [4]. G Majumdar, Dr.S.V.Gole and Prof D R Zanwar, 2010 “Optimum resource management in Indian agriculture for increase the efficiency” Industrial Engineering Journal Vol. II, PP.12-15.
- [5]. Balan Sundarakani, Prem Vrat and Pradeep Kumar , 2008 “An attempt of Supply Chain practices to enhance a Country’s Performance” Industrial Engineering Journal Vol. 1, pp.13-18.
- [6]. Annual Report in March 2016, Department of Agriculture and Cooperation Ministry of Agriculture, Government of India.