DOI : 10.18843/ijms/v5i2(6)/14
DOI URL : http://dx.doi.org/10.18843/ijms/v5i2(6)/14

Catalysing Rural Agribusiness & Enhancing Consumer Welfare - Augmenting Supply Chain Mechanisms in Rural Retailing

Dr. Supriya Patil,

Department of Management Sciences,
Savitribai Phule Pune University,
Ganeshkhind, Pune, India.

ABSTRACT

To succeed a business enterprise depends on competent supply chain management besides other aspects like marketing, quality, cost etc of products. India still faces major hurdles in the last mile distribution segment, especially in the rural areas where approximately 70% of the Indian population lives. It is one of the leading agricultural economies of the world, which accounts for 30% of GDP. Our production of 137 million tonnes of fruits and vegetables is one of the highest in the world. However, we add value to only about 2 % of our produce, as the food supply chain is very fragmented, unorganized, complex structurally and there is high level of wastage. Avoidable supply chain costs (wastage, excess inventory and excess transportation costs) in Indian Food and grocery sales is estimated to be about INR1 trillion (USD $ 24 billion). This is about 50 percent of total operating costs. These problems not only have an impact on the producer but also affect the consumer. This paper reviews the issues faced by the rural agribusiness and rural retailing.

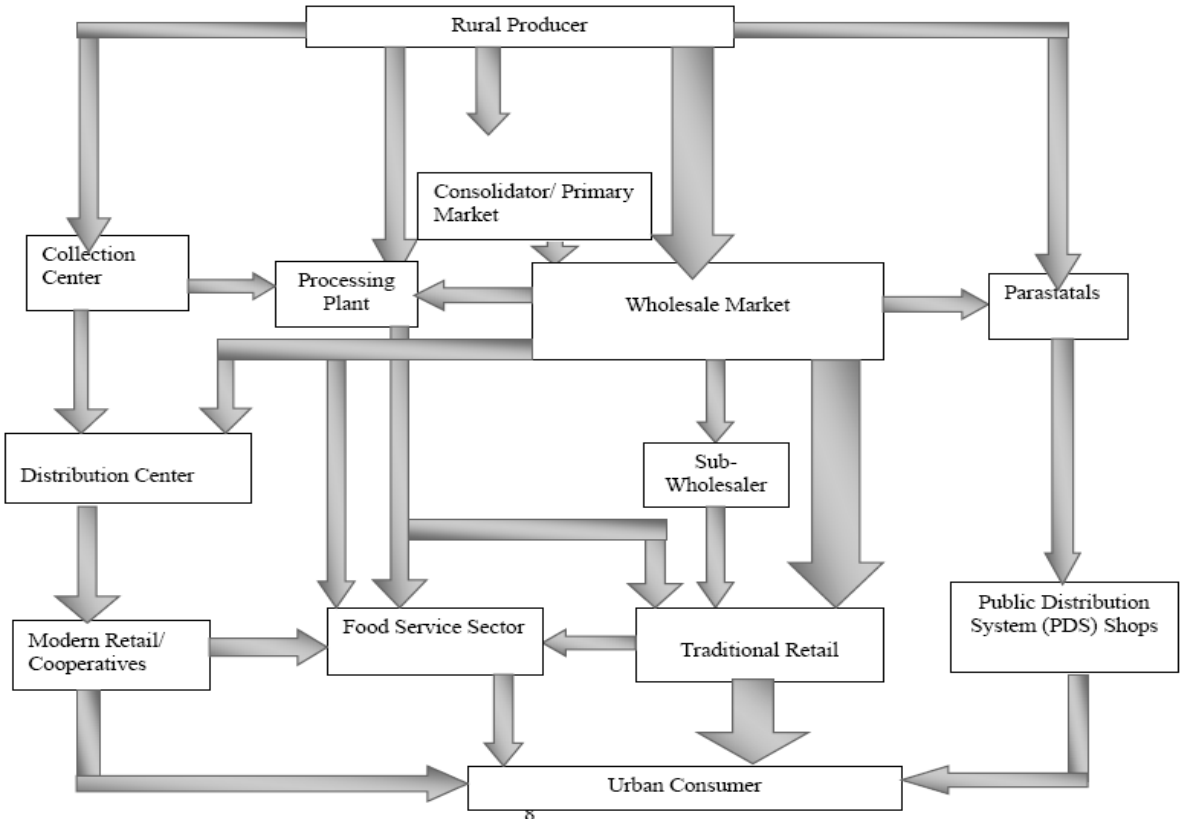
Keywords: rural, agribusiness, retail, supply chain.

INTRODUCTION:

The long term survival of a business enterprise also depends on its efficient supply chain management. Like other developing economies, India lacks in the last mile distribution segment. The supply chain in India is one-dimensional with emphasis on transport aspect, with very little value-added activity since distribution remains fragmented and unorganized. A large number of Indian population (about 850 million) resides in rural areas. Hurdles in transport, logistics, the absence of physical, social, institutional infrastructure, such as commodity markets, dispute resolution mechanisms, low level of technology/outdated technology, several levels of intermediaries & stakeholders (farmers, wholesalers, food manufacturers, retailers) who work in silos combined with large distances that the produce has to travel. This coupled with the warm climate, ensures that consumers only receive produce days after it has left the farm. This is a major issue for perishable goods produced on the farms. Huge quantities of fresh fruits and vegetables perish due to the lack of a cold chain infrastructure. These inefficiencies increase prices for the consumer and affects the farmers as well, who suffer from extremely low realisations. Supply chain costs form over 50 percent of total operating costs in India with avoidable supply chain costs (wastage, excess inventory and excess transportation costs) in Indian Food and grocery sales estimated to be about INR1 trillion (USD $ 24 billion). Thus Indian retailers fare poorly when compared to global players on key supply chain parameters.

As modern trade grows however, supply chain efficiency will be a critical enabler for retail growth to unlock operational efficiencies, facilitate growth, reduce costs and offer competitively priced products, respond to customers' changing needs and providing good customer service, improve the time it takes for food to move from point of manufacture to point of consumption.

Simplified diagram of the agricultural product flow from rural producers to urban consumers in India



Indian Agriculture sector & Agri Food Supply Chain – A Brief Overview:

Strengths:

India is one of the leading agricultural economies of the world, with 160 million hectares of gross cropped area, almost the size of US farmland and larger than that of Europe and China. It accounts for 30% of GDP, concerns the entire population with at least two-thirds of the rural poor deriving their primary livelihood from agriculture and allied activities, employs over 60% of it and is therefore the fulcrum of the Indian economy. Our production of 137 million tonnes of fruits and vegetables is one of the highest in the world with demand for foodgrains estimated to be about 2954 million tons for the year 2016-17.

Weaknesses

Though India is one of the largest producers of various kinds of primary products but we add value to only about 2 % of our produce, while the capacity utilization of various capacities created for processing is about 40-50 % posing a big paradox before us. The Indian food chain is very fragmented and complex due to which there are high level of wastages that occur during the pre-harvesting, harvesting, procurement and storage stages. India wastes more grain than Australia produces, India's wastage of 20 million tonnes of foodgrains at the first stage of harvest is equivalent to Australia's entire production. The value of wastages in the food chain is estimated to be Rs 50,000 crores. We process less than 2% of our horticultural produce as compared to 70% in Brazil and 78% in Philippines.

Constraints/Challenges:Agri-Food Retail Supply ChainInfrastructure:

1) **Grading infrastructure**:

There is a huge gap in the existing and required cleaning, grading and packaging infrastructure in the country. It is estimated that about 7% of food grains, 10% of spices and about 30% of the fruits and vegetables produced in the country are lost before reaching the markets. At the level of regulated markets, there were only 1,093 grading units in 7,557 regulated market yards/ sub-yards. There were only 1,968 grading units at the primary level, which include 587 units with co-operatives and 298 units with other organizations.

2) Cold storage infrastructure:

The cold storage infrastructure is very important for commodities like fresh fruits and vegetables, milk and meat. Lack of cold storage infrastructure is a major constraint for the business. India's current cold storage capacity at 25 MT is barely sufficient for 10% of fruit and vegetables produced in the country. Reports put the total losses on account of poor post-harvest technology in fruits and vegetables to as high as 30% of the total production. The share of public sector in the cold storages is negligible and is dominated by the private sector (Negi, S.). Even, the utilization of the cold storages in India is highly skewed towards a single commodity viz potato.

Commodity	Numbers	Capacity in tons	Share by numbers (%)	Share by capacity (%)
Potato	3,023	1,82,03,712	56.1	76.9
Fruits and vegetables	158	1,12,327	2.9	0.5
Meat and fish	482	1,87,175	8.9	0.8
Milk and milk products	191	68,230	3.5	0.3
Others	87	26,524	1.6	0.1
Multipurpose	1,445	50,64,844	26.8	21.4
Total	**5,386**	**2,36,62,812**	**100**	**100**

Source: DMI

3) Fragmentation:

The large number of intermediaries who operate between the farmer and the consumer is another problem in the supply chain in India. The domination of local traders and commission agents is huge and farmers seem to rely heavily on them for sale of produce.

4) Storage:

The Planning Commission has estimated the gap between agri-warehousing supply and demand at 35 million metric tonnes. Agencies like the FCI, CWC and the State Warehousing Corporations (SWC) have about 71 million metric tonnes, of storage capacity, while the private sector has about to 25 million metric tonnes. In addition, Northern part of India has access to about 60% of these storage facilities (Varma ishita).

Implications:

Small and marginal farmers account for more than 65 % of the land holdings, & 30 percent of cultivable lands. Due to this reason, the average level of marketed surplus is quite low, coupled with the inadequate rural road connectivity and other supporting infrastructure (e.g., cold storage etc.), leads to a huge amount of wastage. The poor infrastructure level and lower penetration of the marketing network causes the entry of a number of intermediaries in the system, which bridge the gap between the buyers and the sellers. However, due to this the payment received by the farmers remains at the lowest end, while the entire margin between the farm-gate and the final price is consumed by the intermediaries. This coupled with an imperfect credit market, results in low investment on land, and stagnation in productivity in turn. Today agriculture markets are working in monopolistic environment, which don't provide many choices to small farmers. Wheat in wholesale mandi in Hapur is Rs 900/qt mp variety, while in retail in Mumbai it is Rs 1800/ qt for same variety.

Synergistic Potential - Growth of Modern Retail & Augmenting Supply Chain Efficiencies:

Food supply chains from rural producers to urban consumers are being transformed in a number of developing countries due to widespread changes in urban food demand: overall urban consumption is increasing; the food basket is shifting away from staples toward high-value products such as dairy products, meat, fish, fruits, and vegetables (Pingali 2007; Gulati et al. 2007). Consumers require more variety and choice; they consume more processed and ready-to-eat food; and they are increasingly concerned about food quality and safety (Jaffee and Henson 2004; Swinnen 2007).These changes are in turn being driven by income growth; urbanization; changes in lifestyle, with more women working outside the home; access to technology such as refrigerators and microwave ovens. The development of better packaging technologies; and the entrance of modern marketing channels, including modern retail, the processing sector, and the food service industry (Reardon and Timmer 2007; Reardon et al. 2003). Reardon et al. distinguish two waves of modernization in food supply chains in

developing countries. The first wave was led by the public sector, where governments intervened in agricultural markets (parastatals) and tried to streamline food supply chains. The second is more recent, is led by the private sector, and concerns the emergence in food supply chains of the private processing sector, the food service sector, and modern food retail. Although modern marketing channels still make up only a minor part of rural-urban food supply chains, they are all growing in importance.

The growing importance of modern retail might have important effects on the rural-urban food supply chain. First, supermarkets typically offer a large selection of processed and semi processed products in their stores, reflecting the larger emphasis on these types of products in urban areas. Reardon et al estimate that this share can be as high as 80 percent or more of the products on offer. The first influence, then, that the rise of supermarkets often has is an impact on the processing sector and the way it does business. Second, for their non-processed food needs, modern retailers in India, as elsewhere, currently rely on a mixture of procurement mechanisms, including sourcing from brokers on wholesale markets in spot transactions, from specialized and dedicated intermediaries on wholesale markets, from theirown collection centers, and from their own farms. Given the current small scale of their operations, procurements from wholesale markets through brokers and through wholesale markets are seemingly the most important procurement method (Reardon et al). However, some large investors in the modern retail sector (e.g., Reliance and ITC) are betting heavily on the setup of collection centers where traditional market channels are bypassed. Farmers usually gain in these settings, as transaction costs are reduced due to lower transport costs (collection centers are set up close to producers), faster turnaround (no auctions take place and no waiting for buyers is necessary), reliable weighing, transparent pricing, and immediate payments (Minten et al. 2009).

Traditional supply chain		Disinter mediated supply chain		Remarks
Channel partner	% Share	Organised sc	Organised SC	
Consumer pays	100%	Consumer pays	94%	Benefit customer @6%
Retailers wastage	5%	Retailer wastage	6%	Actual accountings
Retailer margin	22%	Store margin	25%	Retailer margin increased
Semi wholesale	5%	Semi wholesale	0%	Semi whole seller eliminated
Whole sale wastage	3%	Distributions	5%	Incurred cost on distribution (cold chain)
Whole seller commission	8%	Whole seller commission	0%	Whole seller eliminated
Transit wastage	5%	Transit wastage	2%	Reduced by 3%
Village consolidation	2%	Consolidation exp	2%	Net savings
Post harvest wastage	8%	Post harvest wastage	4%	Net savings 4%
Net to farmer	42%	Net to farmer	50%	Increased earnings By 8%
Total	**100%**		**94%**	

(Source: Spencer's Retail)

Exploiting Synergies – Creating Efficiencies by Modernizing Farm-To-Fork Supply Chain Mechanisms:

Establishing an efficient supply chain that links farmers and small manufacturers (who have limited infrastructure or distribution strength) directly with retailers, will maximize value for all stakeholders - Minimise wastage especially for fresh foods and vegetables; will increase farmers' realizations; will encourage best practices in crop management and will improve food safety & hygiene. This will in turn develop a robust supply chain integrating the farmers into the modern trade processes resulting in knowledge and skills transfer. This will ensure that farmers receive higher prices for their produce, provide a more transparent mechanism for pricing, helps stabilize order quantities, eases the access to credit and provides for better planning at the time of harvest.

This leads to an increase in the productivity of the agricultural sector & consequently the growth of the agribusiness sector, which consists of complex layers of activity in marketing, storage. The impacts of agricultural productivity on agribusiness are of two kinds: (a) on commercial agriculture and (b) on the

marketing sector. Regarding the first kind of impact, agricultural productivity affects both the supply and demand of the products of commercial agriculture. On the supply side, higher productivity in food staples releases land and other resources for commercial agriculture. On the demand side, higher productivity raises rural incomes, which lead to a greater demand for non-staple foods. Regarding the second kind of impact, higher agricultural productivity creates marketable surpluses without which the marketing system remains underdeveloped. As the supply of marketing and processing services is subject to fixed costs, higher marketable surpluses lower the cost of these services and expand this sector.

REFERENCES:

Ablett, J., A. Baijal, E. Beinhocker, A. Bose, D. Farrell, U. Gersch, E. Greenberg, S. Gupta, and S. Gupta. (2007). *The Bird of Gold: The Rise of India's Consumer Market.* San Francisco: McKinsey Global Institute.

Basu, J. P. (2010). Efficiency in Wholesale, Retail, and Village Markets: A Study of Potato Markets in West Bengal. *Journal of South Asian Development* 5 (1): 85–112.

Bhavani, T. A., A. Gulati, and D. Roy. (2006). *Structure of the Indian Food Processing Industry: Have Reforms Made a Difference?, In Plate to Plough: Agricultural Diversification and Its Implications for the Smallholders in India,* submitted to Ford Foundation by the International Food Policy Research Institute. Washington, DC.

Das Gupta, S., T. Reardon, B. Minten, and S. Singh. (2010a). The Transforming Potato Value Chain in India: Potato Pathways from a Commercialized-Agriculture Zone (Agra) to Delhi, Chapter 2. Improved Value Chains to Ensure Food Security in South and Southeast Asia, *Asian Development Bank-IFPRI New Delhi Office*

Joseph, M., N. Soundararajan, M. Gupta, and S. Sahu. (2008). *Impact of Organized Retail on the Unorganized Sector.* ICRIER Working Paper 222. New Delhi: Indian Council for Research on International Economic Relations.

Ministry of Food Processing. (2008). *Annual Report 2007–08.* New Delhi: Ministry of Food Processing.

Minten, B., T. Reardon, and R. Sutradhar. (2010). Food Prices and Modern Retail: The Case of Delhi. *World Development* 38 (12): 1775–1787.

Morisset, M., and P. Kumar. (2008). Structure and Performance of the Food Processing Industry in India. *Mimeo*.

Natawidjaja, R., T. Reardon, and S. Shetty, with T. I. Noor, T. Perdana, E. Rasmikayati, S. Bachri, and R. Hernandez. (2007). *Horticultural Producers and Supermarket Development in Indonesia. Universitas Padjadjaran/Michigan State University Report No. 38543.* Jakarta: World Bank/Indonesia

Praduman Kumar, P.K. Joshi and Pratap S. Birthal. Demand Projections for Foodgrains in India, *Agricultural Economics Research Review,* Vol. 22 July-December 2009 pp 237-243

Reardon, T., and B. Minten. (2011a). Surprised by Supermarkets: Diffusion of Modern Food Retail in India. *Journal of Agribusiness in Developing and Emerging Economies* 1 (2)

Saurav Negi1 and Neeraj Anand. Issues and Challenges in the Supply Chain of Fruits & Vegetables Sector in India: A Review. *International Journal of Managing Value and Supply Chains (IJMVSC)* Vol. 6, No. 2, June 2015
