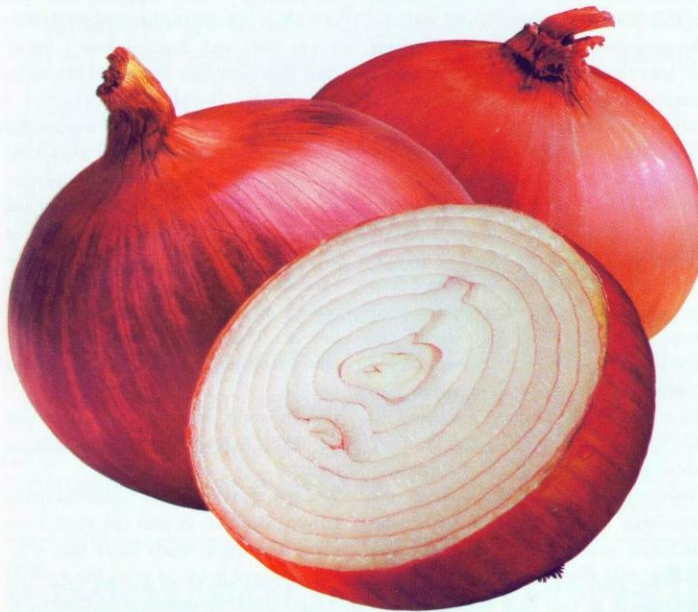


The Next Frontier?



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Well, it had to happen. Sooner or later the government had to put its hand up in despair in failing to control vegetables prices. Today its onions, tomorrow it could be vegetables. As economy gets freed, it's the market forces – read supply and demand – that will increasingly determine prices.

Once again, the focus is back on cold supply chain in India. Almost like shutting the door after the horses have bolted, from the finance ministry to commerce ministry to agriculture ministry, they have suddenly woken to the fact that India's cold chain supply leaves a lot to be desired. Its not a new topic either.

For the past several years, seminars, workshops, committees have been

talking about beefing up the cold chain supply. In fact in December 2010, at a seminar organised by Confederation of Indian Industries (CII), the government announced “the National Centre for Cold Chain Development (NCCD) will be in operation soon”.

Contrary to the popular belief, cold chain is not merely refrigeration of perishable commodities. Cold chain is a logistics system that provides a series of facilities to maintain ideal storage conditions for perishables from the point of origin to the point of consumption in the food supply chain. The chain needs to start at the farm level – post harvest, pre-cooling, etc. – and reaches to the consumer or at least to the retail outlets. A well organized and efficient cold chain reduces spoilage, retains the quality of the harvested products and guarantees a cost efficient delivery to the consumer. A significant aspect of the system is that if any of the links is missing or weak, the whole system might fail.

Commodity wise distribution of cold storage capacity

Commodity	Commodity Capacity (lakh tonnes)
Potato	92.82
Multi purpose	7.63
Fruits and Vegetables	1.07
Meat	0.09
Fish	0.73
Meat & Fish	0.15
Milk & Dairy Products	0.68
Others	0.36



The Cold chain logistics infrastructure generally consists of:

- Pre-cooling facilities
- Cold Storages
- Refrigerated Carriers
- Packaging
- Warehousing
- Information Management systems (Traceability and Tracking etc.)

India's cold storage story dates back as far back as 1938, when a unit was set up in Meerut for storing potatoes. Potatoes still dominate the country's cold storage scenario accounting for as much as 92 per cent.

There has hardly been any significant change in the past 70 years. Overall, our cold storages can store around 22 million metric ton. Of this, Uttar Pradesh and West Bengal have 65 percent of the installed capacity. While we have one case of McDonalds in India which uses smart temperature-controlled supply

and distribution, we also have many companies whose food stock is met with rejection in Europe.

The estimated annual production of fruits and vegetables in the country is about 130 million tonnes accounting for 18 per cent of our agricultural output. Moreover, the lack of cold storage and cold chain facilities are becoming major bottlenecks in tapping the vast potential. The cold storage facilities now available are mostly for a single commodity like potato, orange, apple, grapes, pomegranates, flowers, etc. which results in poor capacity utilization. Out of the above 3443 cold storage units, 2975 are in private sector, 303 are in co operative sector and the rest are in public sector. Clearly, this is not at all adequate, as India's vast produce rot due to lack of cold storage resulting in increased cost of the same produce.

Except for a few examples, India has a totally un-integrated cold supply chain. In

some pockets, individual entrepreneurs have ventured into the cold storage business. Most of these are of poor technical design and do not adhere to the international standards of storing and stacking. Overall, the cold chain supply chain industry in India appears like the next big wave that never lashed. The technology used continues to be archaic. Many cold warehouses are nothing but a large shack cooled by some equipment. Temperature zoning, air curtains, air locks, etc. are not being used effectively or at all.

Regulations in cold storage infrastructure allow 100 percent Foreign Direct Investment (FDI). This consists of coolers, warehouses, reefer trucks, retail locations, chillers, etc. The Union Budget of 2010-11 also provided for accelerated depreciation among other benefits. Yet very little FDI or local investments have come in. The cold chain industry

is currently around Rs 15,000 crore and is expected to touch Rs 40,000 crore by 2015. Why is it then that foreign investment in cold chain is conspicuously amiss?

Among many other infrastructure bottlenecks that inhibit FDI, the issue also lies in lack of understanding of an integrated cold supply chain management in our country. The refrigeration expert or refrigeration supplier is mistakenly identified as the Cold Chain expert! This has been the common error when identifying expertise to establish a viable and optimal cold chain. One should be aware that refrigeration is only one – albeit an important one – component of the complete cold chain. Expertise in cold chain management means applying refrigeration as a technology to facilitate preservation and care of perishables in the closed cold chain loop. It calls for a deep understanding on efficient energy use, optimal choice of the care to be applied, efficient mode of transfer of products from farm to consumer, appropriate and selective choice of equipment and application, primarily the complete process that is the back bone of the entire cold chain.

Moisture loss is one of the main causes of deterioration that reduces the quality of fruits and vegetables. Refrigeration inherently dries the air. Special techniques must be employed to maintain humidity levels in a store – both vegetables and meats/fish. Very little or no consideration is given to the fact that fresh vegetables are living and continue to undergo life processes when stored. They need to breathe even during the cooling period. They create carbon dioxide and other gases that require regular purging, otherwise they will die or wilt. Cold spaces are intended for term storage of produce yet to be sold. They are an important aspect in bringing revenue to those who harvest the produce. Cold rooms cannot be simply large-size refrigerators. The most crucial erroneous installations are those dealing with living perishable produce – vegetables. For vegetables and fruits, it is important to consider the weather and wind patterns in the area, average cloud

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cover in the region, solar/ UV radiation in region, and of course, marketability.

Care of post-mortem (fish, meat) food items is relatively simpler. But even for high value post-mortem food items, cold chain means impeccable care at every stage. My firm RGL imports many high-value post mortem food items. To maintain a prolonged shelf life of these items, extreme care is required right from unloading of these items from containers to transporting the same to our warehouses through reefer trucks to maintaining distinct temperatures for each of the items and ensuring that temperature fluctuations do not occur. That means a stringent and proper planning for storage areas, breathing air flows and a host of nuances that need to be adhered to very stringently.

My experience is that even if the technology can be cost effectively acquired and operated with regularity, the management skill to order proper quantities and enforce proper cold chain practices throughout the chain has to develop.

Since fuel and electricity costs in India are higher than in other places, it is all that more important to be tight operators there than anywhere else for the cold chain industry to flourish. We do have enormous fascination with technology in India and little respect for real management.

Cold storage is still in a nascent stage and thus evolving. The viability has to come both from consumers and from the service providers. In India, less than

two per cent of the fruits and vegetables produced are processed as against 65 per cent in the US and 70 per cent in Brazil, as per farm ministry estimates. Moreover, wastage of fruits and vegetables due to poor post-harvest management and lack of cold chain facilities have been estimated to cost up to Rs 500 billion annually, as reported in the fifth and final report of the National Commission of Farmers.

Finance Minister Pranab Mukherjee has announced a number of schemes to attract investment in this sector as he wants to bring down “difference between the farm gate prices, wholesale prices and retail prices”.

He also said that, “External Commercial Borrowings will henceforth be available for cold storage or cold room facility, including for farm level pre-cooling, for preservation or storage of agricultural and allied produce, marine products and meat”. And to further ease the problem, he has exempted customs duty on crucial refrigeration units needed to produce refrigerated vehicles. He also allows extending of hiring private warehouses by state run Food Corp to seven years from five years to meet the storage deficit.

The potential for cold chain development in India is huge, rate of food processing in India is low and is growing, waste in the perishable F&B category is a key point that needs to be addressed, and there are a number of other sectors apart from food which also rely on reliable cold chain development, expected market size for cold chain services in India is projected to reach US\$ 10 billion in the next five years.

But none of this would really work till we improve not just our physical infrastructure but also social and economic infrastructure. A typical truck driver need to stop 49 times during his 2,400-km journey from Kolkata to Delhi because of bad roads, innumerable toll gates which operate on different billing systems, and corrupt officials, causing delays and an unproductive journey. The best of cold supply management will not make things efficient till these bottlenecks are eased. ▽