

## Chapter 25

# Perishable Goods Supply Cold Chain Management in India

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### ABSTRACT

*India has seen a phenomenal growth and occupies the top three positions in production from last decades in production of horticulture produce, dairy and meat products over the last decade. But at present, India's share in global farm trade is still very small even with such large production volumes. This is mainly caused due to lack of cold chain infrastructure which includes both storage and transportation facilities. The cold chain industry in India is still at a nascent stage and despite large production of perishables, the cold chain potential still remain untapped due to high share of single commodity cold storage, high initial investment (for refrigerator units and land), lack of enabling infrastructure like power & roads, lack of awareness for handling perishable produce and lapse of service either by the storage provider or the transporter leading to poor quality produce. Cold chain systems are crucial to the growth of global trade in perishable products and to the worldwide availability of food and health supplies.*

### INTRODUCTION

India has seen a phenomenal growth and occupies the top three positions in production from last decades in production of horticulture produce, dairy and meat products over the last decade. But at present, India's share in global farm trade is still very small even with such large production volumes. India is also one of the world's largest consumers of food. According to Top Markets Report, 2015, on Cold Chain by International Trade Administration, it is the third largest producer of agriculture. India is one of the largest producers of milk in the world with the largest livestock population. India is the second largest producer of fruits and vegetables in the world with production of 81.3 million MT and 162.2 million MT respectively but its share in global export of fruits and vegetables is around 1.4% only. Approximately,

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18% of fruits and vegetables get wasted in the country. This is mainly caused due to lack of cold chain infrastructure which includes both storage and transportation facilities.

Food processing methods refers to value addition to agricultural or horticultural produce. The food processing sector is composed of two segments:

1. Primary food processing sector (62% in value, packaged fruits and vegetables, milk, etc.) and
2. Value added food processing sector (38% in value, processed fruits and vegetables, juices, jam & jelly etc.).

Specifically in India, around 40% of produce gets wasted due to inadequate cold chain infrastructure, and one third of losses incur during storage and transit as it has less than half the capacity to meet its current cold chain needs([www.coolingindia.in](http://www.coolingindia.in), 2016).

Now, the Indian agriculture sector is on the threshold of a major shift from traditional farming to horticulture, meat and poultry and dairy products, all of which fall under perishables. As the consumption habit is changing drastically, the demand for fresh and processed fruits and vegetables is also increasing with urban population. It is expected that Indian cold chain industry will attract more overseas partners to learn more about the market to position themselves to take full advantage of emerging opportunities. Cold chains are primarily for fruits and vegetables, meat and marine products, dairy products, ice creams and confectionery, which are perishable. The markets for cold chain have been sub-divided into a number of sectors. These are, for example, agriculture, horticulture, fisheries aquaculture, dairy, processed food for ready-to-eat together with the packaging companies, retailers, wholesalers, etc.

There is an arising increase in demand, diversification and value addition which are the dominating factor in the Indian agriculture today. The emergence of an organised retail food sector coupled with changes in FDI laws has created fresh opportunities in domestic perishables and food industry which includes the cold chain sector. The Indian government needs to focus more on food preservation so the cold storage sector may undergo a major breakthrough. The government is giving full support and has introduced various incentives and policy changes in order to eliminate production wastage and decide on fair price for harvest, increase PPP and improve the country's rural infrastructure. It is expected that Indian cold chain industry will attract more overseas partners to learn more about the market to position them to take full advantage of emerging opportunities ([www.itln.in](http://www.itln.in), 2014).

The success totally relies upon effective management of the 'cold chain', a term used to describe the series of interdependent operations in the production, distribution, storage and retailing of chilled and frozen foods. Control of the cold chain is vital to preserve the safety and quality of refrigerated foods and comply with legislative directives and industry 'codes of practice' (EU Commission).

## **REQUIREMENTS OF COLD CHAIN**

Cold chain for perishable foods is becoming increasingly important. As, a study done by the United Nations Environment Program conveyed that over half of the food produced globally is lost, wasted or discarded as a result of inefficiency in the human-managed food chain. Now a day, proper temperature monitoring and management throughout the cold chain is no longer a luxury but have become a necessity. Even relatively a small variation in temperature can significantly impact the shelf life of fresh produce and its value. The cold chain requires the monitoring of temperature monitoring throughout the cold

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