

# Chapter 13

## Food Cold Chain Management: An Indian Perspective

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### **ABSTRACT**

*Food cold chain management (FCCM) is a specialized kind of supply chain supported by the two different technologies first, refrigeration and second information technology. The refrigeration equipments like cold storages and cold storing devices. They can keep the food quality cum safety intact and enhance food items shelf life. The information technology enables the tracking and tracing through data loggers etc. Despite the huge fresh produce availability in India, food inflation and food security issues are major concerns for policy makers. The food wastage in India is close to US\$ 8309 million annually (US\$ 60.17) due to lack of processing and cold storage facilities. The aim of this paper is to discuss status of food cold storage in India. The chapter is based on extensive review of existing literature, studying novel cold storage status and presenting benefits of cold storage. The outcome of research will be that FCCM can play vital role in supplying quality, safe food products and instrumental in reduction of food wastages.*

### **INTRODUCTION**

The transportation and delivery of temperature-controlled eatable items is a fast-growing part of the overall food logistics sector. It is because of four major reasons such as volume growth of eatable items (Soon et al. 2012, Abadias et al., 2008); globalization of food logistics as global food foreign trade increases (Kittipanya-ngam et al. 2011, Acar et al., 2010); world trade organizations rigorous regulatory framework such as sanitary and phytosanitary measures (SPS), Codex standards etc. (Neeliah et al., 2013, European Commission, 2011) and consumer awareness and demand for global quality food products

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(Mukherjee et al., 2012, Kearney, 2011). It will ensure by producers through managing transportation and delivery of temperature-controlled food. It is done either by companies' distribution system or by an integrated logistics provider who manages relationships with freight carriers, warehouses, brokers etc.

Food cold chain management (FCCM) is a specialized kind of supply chain supported by the two different technologies first, refrigeration and second information technology. The refrigeration equipments like cold storages, cold storing devices, refereed vehicles etc. can keep the food quality, safety intact and enhance its shelf life. The information technology enables the tracking and tracing through data loggers, radio frequency identification devices (RFID) for effective food supply chain management (FSCM). In the present chapter attention is paid to status of cold storage in India. Despite the huge fresh produce availability in India, food inflation and food security issues are major concerns for policy makers. The food spoilage and wastages to the scale of US\$ 8309 million, is happening in India annually. FCCM can play vital role in supplying quality, safe food products and instrumental in reduction of food wastages. The objective of present chapter is to discuss status of food cold storage in India.

The structure of chapter is as follows: after introducing the subject matter, literature review on cold chain management is presented. The chapter briefly explains the need for cold storage. The present chapter also compares a global and Indian cold storage status and deal in cold storage management challenges and benefits. The chapter is concluded with key managerial insights and research contributions, limitations and future scope of research.

## **LITERATURE REVIEW ON COLD CHAIN MANAGEMENT**

The review of literature on cold chain management is furnished to elaborate tasks and requirement for food supply chain management. The literature review pertaining to FCCM is discussed for the period of 2001-2014.

The operational CCM will be developed by performing mentioned tasks in table1. It may result in providing a much better and broad picture of Indian food supply chain on the world map. If current position of CCM and cold storage is improved then, it may be also instrumental in boosting domestic sales of processed food as well as its exports. It will support in tackling the issues of rising prices and food wastages. Rather it may shore up in creation of food surplus processed food which can be exported from India.

## **NEED FOR COLD STORAGES IN INDIA**

India has total population 1.237 billion in 2012 to support. Indian gross domestic product (GDP) is US\$1.842 trillion with GDP growth 3.2% in 2012. Indian economy is progressing with per capita GDP US \$1489 in 2012. India has 60.5% land used for agricultural. India has the second largest population in the world to feed. Despite the huge fresh produce availability in India, food inflation and food security issues are major concerns for policy makers in the country. It affects the basic need for Indian citizens to have sufficient, healthy and affordable food. A national research study on quantitative assessment of harvest and post harvest losses for 46 agricultural produces in 106 randomly selected districts was done by central institute of post harvest engineering and technology (CIPHET) in 2010. The food wastage is

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