Summary

India is an agricultural-based economy. More than 52 percent of India’s land is cultivable, compared to the global average of 11 percent. Each year, India produces 63.5 million tons of fruits and 125.89 million tons of vegetables. India is also the largest producer of milk (105 million metric tons per year). India produces 6.5 million tons of meat and poultry, as well as 6.1 million tons of fish a year. The perishable products transaction volume is estimated to be around 230 million metric tons. Although India has the potential to become one of the world’s major food suppliers, the country’s inefficient cold chain network results in spoilage of almost 40 percent of its total agricultural production. The total value of the cold chain industry is estimated to be as high as USD 3 billion and growing at 20-25 per cent a year. The total value is expected to reach USD 8 billion by 2015 through increased investments, modernization of existing facilities, and establishment of new ventures via private and government partnerships.

The Indian agricultural sector is witnessing a major shift from traditional farming to horticulture, meat and poultry and dairy products, all of which are perishables. The demand for fresh and processed fruits and vegetables is increasing as urban populations rise and consumption habits change. Due to this increase in demand, diversification and value addition are the key words in the Indian agriculture today. These changes along with the emergence of an organized retail food sector spurred by changes to Foreign Direct Investment laws, are creating opportunities in the domestic food industry, which includes the cold chain sector.

As a result of the Government of India’s new focus on food preservation, the cold storage sector is undergoing a major metamorphosis. The Government has introduced various incentives and policy changes in order to curtail production wastage and control inflation; increase public private participation and improve the country’s rural infrastructure. We project that the Indian cold chain sector will expand at a faster rate in the near future and recommend all U.S. companies selling to the cold chain industry to learn more about the market to position themselves to take full advantage of emerging opportunities.

Market Demand and Market Data

The total value of India’s cold chain industry is currently estimated at USD 3 billion and reportedly growing at an annual rate of 20-25 per cent. The total value for the industry is expected to reach at USD 8 billion by 2015 through increased investments, modernization of existing facilities, and establishment of new ventures via private and government partnerships.

India’s cold chain industry is still evolving, not well organized and operating below capacity. Most equipment in use is outdated and single commodity based. According to government estimates, India has 5,400 cold storage facilities, with a combined capacity of 23.66 million metric tons that can store less than 11% of what is produced. The majority of cold storage facilities are utilized for a single commodity, such as potatoes. Most of these facilities are located in the states of Uttar Pradesh, Uttarakhand, Punjab, Maharashtra, and West Bengal. The following table shows distribution of facilities by commodity:
India’s Cold Chain Industry

### Commodity Capacity (million tons)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Capacity (million tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potato</td>
<td>9.282</td>
</tr>
<tr>
<td>Multi-purpose</td>
<td>0.763</td>
</tr>
<tr>
<td>Fruits &amp; Vegetables</td>
<td>0.107</td>
</tr>
<tr>
<td>Meat</td>
<td>0.009</td>
</tr>
<tr>
<td>Fish</td>
<td>0.073</td>
</tr>
<tr>
<td>Meat &amp; Fish</td>
<td>0.015</td>
</tr>
<tr>
<td>Milk &amp; Dairy Products</td>
<td>0.068</td>
</tr>
<tr>
<td>Others</td>
<td>0.036</td>
</tr>
</tbody>
</table>

Statistical data are unofficial estimates from industry sources.

In addition, India has about 250 reefer transport operators (this includes independent firms) that transport perishable products. Of the estimated 25,000 vehicles in use, 80% transport dairy products (wet milk); only 5,000 refrigerated transport vehicles are available for all other commodities.

India’s greatest need is for an effective and economically viable cold chain solution that will totally integrate the supply chains for all commodities from the production centers to the consumption centers, thereby reducing physical waste and loss of value of perishable commodities. For this reason, the Government of India has prioritized the development of the cold chain industry. The government has laid out elaborate plans and incentives to support large scale investments essential for developing an effective and integrated cold chain infrastructure.

### Best Prospects

According to a report released by Technopak, a leading consulting firm, India’s food industry, which is currently estimated to be at approximately USD 100 billion will grow to USD 300 billion by 2015. According to a survey conducted by Corporate Catalyst India, another leading consulting firm, “Value addition of food products is expected to increase from 8 percent to 35 percent and that of fruits and vegetable processing from the current 2 percent to 25 percent by the end of 2025”. The survey further reports that the dairy sector, which currently comprises the highest share of the processed food market, will experience marked growth.

One of the most critical constraints in the growth of the food processing industry in India is the lack of integrated cold chain facilities. According to the government’s estimates India has 5,400 cold storage facilities of which 4,875 are in the private sector, 400 in the cooperative sector and 125 in the public sector. Although the combined capacity of the cold storage facilities is 23.66 million metric tons, India can store less than 11% of what is produced. Most of the infrastructure used in the cold chain sector is outdated technology and is single commodity based. Many are designed for storing potatoes. Industry experts believe that controlled atmosphere storage facilities and other cold storage facilities with the technology for storing and handling different types of fruits and vegetables at variant temperatures would have a very good potential market in India.

Another major constraint is the lack of refrigerated vehicles for movement of perishables produce (with the exception of milk). According to industry estimates, approximately 104 million metric tons of perishable produce is transported between cities each year. Of this figure, about 100 million metric tons moves via non-reefer mode and only four million metric tons is transported by reefer. Although there are currently more than 25,000 vehicles and 250 operators involved in refrigerated transport, 80% of this capacity is dedicated to transporting milk. When compared with world standards for cargo movement through cold chain, India is still far behind. The percentage of movement of fruits and vegetables through cold chain in U.S. is around 80 to 85 percent, Thailand is 30 to 40 percent and India is negligible. Currently, most of the refrigerated transport in India is operated by small, non integrated firms that do not make use of state-of-the-art technology or
management practices. Therefore, India offers market potential for cold chain logistic solution providers, including refrigerated transport services.

In addition, U.S. companies providing equipment and technology for pre-cooling, sorting, grading, packaging, and information management systems (for traceability and tracking) will have good prospects in India.

The Government of India now recognizes that development of cold chain is an essential next step in upgrading India’s food processing industry. In the 2011-2012 national budget, the Indian government announced a series of measures to reduce the production and supply chain bottlenecks in the agricultural sector in order to facilitate modernization, ease importation of foreign equipment, and attract foreign investment in India. Some of these measures are listed below:

- Accorded infrastructure status to post-harvest storage, including cold chain;
- Raised the corpus of Rural Infrastructure Development Fund XVII to $4 billion in FY 12 from $3.5 billion in FY 11 and the additional allocation would be dedicated to the creation of warehousing facilities;
- The Viability Gap Funding Scheme is extended for public private partnership projects to set up modern storage capacity;
- Air-conditioning equipment and refrigeration panels for setting up cold chain facilities would be exempted from excise duty beginning in the next fiscal year. Conveyor belts for equipment used in cold storage, wholesale markets and warehouses would be also exempted from excise duty;
- Creation of an additional 15 million tons capacity of storage capacity through public private partnerships put on a fast track;
- The National Horticulture Mission has sanctioned 24 cold storage projects with a capacity of 140,000 metric tons;
- An additional 107 cold storage projects with a combined capacity of over 500,000 metric tons have been approved by the National Horticulture Board;
- Promised full exemption from service tax for the initial set up and expansion of cold storage, cold room (including farm pre-coolers for preservation or storage of agriculture and related sectors produce) and processing units. In addition, full exemption from customs duty for the manufacture of refrigerated vans or trucks have also been promised;
- A package of measures to improve the availability of storage and warehouse facilities for agricultural produce and to incentivize food processing;
- Announcement to set up 15 more mega food parks in the country;
- States asked to reform the Agriculture Produce Marketing Act urgently to improve the supply chain;
- A National Food Security Bill will be introduced in the Parliament later this year;
- Credit flow in agriculture raised from USD 84 billion to USD 107 billion ensuring that resources do not constrain growth in the sector

Key Suppliers

The following is a partial list of companies currently supplying cold chain technology/equipment/services in India: Ingersoll Rand (USA); Rinac; Walco Engineering; Frick India; Carrier; Bluestar; Lamilux; Dupont; Emerson Climate Technologies; Parker Hannifin; Snowman; R.K. Foodlands; Schaefer Systems International Pvt. Ltd.; Metaflex Doors India Pvt. Ltd.; Alfa Laval (India) Limited; Tolsma Storage Technology, Snowman Frozen Foods; Fresh and Healthy Enterprises, and Apollo-Everest Cool Solutions

Prospective Buyers

Following is a partial list of prospective businesses which are buyers of cold chain technology/equipment/services in India: fruit and vegetable sellers; food processors; warehouse / cold storage owners; refrigeration and cold chain equipment and technology suppliers. Others include Cold Logistics firms such as shipping lines, transporters, container companies, warehousing agents, supply chain solution providers, ports (Indian and international), large format retailers and wholesalers, academic and research institutions, government organizations, packaging service providers, specialized equipment providers,
Market Entry

The Indian Cold Chain industry is poised to grow and is expected to offer significant opportunities for U.S. cold chain companies in the near future. As an immediate step to assist U.S. companies in this sector, the U.S. Department of Commerce (USDOC) has certified the India Cold Chain Expo (ICE) 2011 which will be held December 1-2, in Mumbai, India. Organized by i2i Consulting (the Indian representative for the Global Cold Chain Alliance) ICE 2011 is India's first and largest national level cold chain event that solely focuses on cold chain products, technologies and services. This will be an ideal platform for U.S. companies to assess the market and showcase their latest equipment and technology to key government and industry buyers. The U.S. Commercial Service (USCS) office will organize a U.S. Pavilion offering U.S. exhibitors special discounted prices, an Embassy market briefing, counseling by USCS experts, and arrange for one-on-one, matchmaking meetings with prospective partners, distributors, and customers. The USCS strongly recommends U.S. cold chain companies to exhibit at ICE Expo 2011 to be the first to assess emerging opportunities in India. To register for ICE Expo 2011 please visit - http://export.gov/india/tradeevents/ice2011/index.asp

Apart from attending the show, U.S. cold chain companies can enter the Indian market by identifying local partners, agents or distributors. The local partners will be aware of the existing market potential, competition, and opportunities. They will know how to utilize the government's incentive programs on behalf of U.S. companies with whom they work. U.S. companies interested in identifying business partners in India can use the various fee-based services offered by the U.S. Commercial Service office in India. For more information, visit the following weblink: http://export.gov/india/servicesforu.s.companies/index.asp

Another way to approach the Indian market is by directly participating in tenders for projects created by the various state governments. In addition, companies can follow other firms like Ingersoll Rand, Carrier, and Dupont that have established offices here.

Market Issues & Obstacles

In India, the agri-supply chain is poorly integrated, posing challenges at each step. There are huge gaps in the system, both in terms of capacity and integration. Critical linkages like reefer transport and on farm infrastructure are almost non-existent. Despite the obvious need for improvement and new government initiatives to stimulate growth, private investment is in short supply for some of the following reasons:

- **Lack of knowhow and trained manpower** – Despite the increasing number of infrastructure projects, there is a severe lack of manpower with appropriate skill sets to handle modern technology;

- **Lack of backward & forward linkages to supplement cold chain** – Cold chain in itself is not a complete solution to address quality and marketability issues concerning perishable products. The commodities which are transported and stored in the cold chain should have enough market value to absorb the added cost;

- **Lack of trust concerning viability of cold chain projects** – Cold chain projects are still seen by investors as high on capital, low on volume and requiring a long payback period for the investment. Cold chain projects also involve aggressive marketing and investment on backward and forward linkages. This, coupled with a dearth of successful demonstration projects in the sector is keeping potential investors away;
High capital investment – As noted above, a high level of capital is required at the initial stage of building a high-end cold chain facility, thus reducing the attractiveness of this type of investment. The lack of institutional investors has not helped to improve the sector. The result, to date, has been a disorganized approach to establishment of a truly efficient cold chain network of facilities and transportation companies;

High operational costs due to high cost of power – Unlike the agricultural sector which is offered highly subsidized power tariffs by the Government of India, the cold chain industry does not enjoy this status and is instead subjected to industrial power tariffs. This significantly increases the operational cost for cold chain operators and act as a major deterrent for growth;

Problems of optimization in reefer transport – Lack of two-way cargo movement/ back haulage, interstate barriers, intercity/state taxes, and bad roads are some of the issues which increase operating costs, delay timely deliveries and reduce the efficient utilization of fleets.

Trade Events

India Cold Chain Expo (ICE) 2011, December 1-2, 2011, Mumbai

Organized by i2i Consulting (the Global Cold Chain Alliance’s India representative), ICE Expo 2011 is a trade show and conference that exclusively focuses on the cold chain industry. ICE Expo 2011 has been certified by the U.S. Department of Commerce and will feature a U.S. Pavilion staffed by U.S. Commercial Service specialists. For more information about the show please contact:

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U.S. companies interested in using the discounted fees and booth sizes offered for exhibiting at ICE Expo 2011 may contact any of the following U.S. Commercial Service India specialists:

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