



INDONESIAN COLD CHAIN LOGISTICS OVERVIEW

Frank Findlow - Triple EFF Consulting

Executive Summary

This report will highlight the current state of the Indonesian Cold Chain. It will consider major players and user segments. Following on from the vaccine cold chain awareness, this report will endeavor to provide the reader with a broad understanding of cold chain activities within Indonesia.

Overview

The Indonesian economy fully recovered in 2021, despite a temporary slowdown due to a COVID-19 outbreak in the third quarter. Investment picked up, exports boomed, inflation was low, and the budget deficit was lower than forecast. Key reforms were implemented last year, and stronger growth is expected for 2022.

The downside risks are the economic impact of the Russian invasion of Ukraine and potential COVID-19 outbreaks are still of concern.

The medium-term challenge is to harness digitalization to raise productivity and growth.

Indonesian cold chain relativity

The current National Logistics Capacity for all materials is 31,000,000 Tons. * (latest numbers) Of which cold chain sector is 1,920,000 tons.

Majority of Cold Chain operations companies are registered in ARPI the Asosiasi Rantai Pendingin Indonesia (Indonesian Cold Chain Association) and ALFI the Asosiasi Logistics Freight Forwarders Indonesia.

This includes Pharmaceuticals, F&B Industries, Fresh Food products, Fish & Seafood, Dairy & Ice Cream. Capacity as of October 2020 was 2.4mm Pallets @ 750-1,000kg per pallet.

By 2030, Indonesia is projected to become the 7th largest cold chain market in the world, driven by the consumer population, as the 4th largest in the world. (McKinsey study).

Indonesian cold chain users

Prospects for cold storage space in Indonesia is growing at 15-20% YoY, verified by most cold storage warehouses being at or near capacity.

Storage of proteins, poultry, meat products, fish, seafood, vegetables, fruits and the like.

Driven by the increasing Indonesian economic growth, accompanied by the development of the user industries.

A contributing factor is the large population with a changed consumption pattern that requires efficiency and speed.

The continued development of the retail sector and restaurant chain stores have also encouraged the development of cold storage business in Indonesia.

These retail networks have many outlets spread across several locations, this requires compliant handling and a professional distribution network to ensure the goods arrive at their destination “Fit for Purpose.

This is also a requirement for export and import business of fishery products, meat, fruit and vegetables and the ice cream industry.

An example of a major protein producer is shown below.



Indonesian cold chain players

Based on a survey conducted by CIC, at the end of 2018, there were around 69 major cold storage companies throughout Indonesia with a total capacity of 370,000 tons per year.

The number one Company being PT Enseval Putra Megatrading Tbk (EPMT), which is responsible for delivering pharmaceuticals for Kalbe and third-party principal products to over 1 million outlets in Indonesia.

In addition, Kalbe has also expanded the business portfolio of the Division to include raw material trading, medical device trading and retail and health services.

Kalbe's distribution and Logistic network for pharmaceuticals products is the most extensive in Indonesia.

The table below shows the top 10 companies.

No.	Name of Company	Capacity (Ton)	Share (%)
1	Enseval Putra Megatrading Tbk, PT	59,000	15.9
2	Unilever Indonesia, PT (Wall's ice cream)	50,000	13.5
3	Sukanda Djaya, PT	45,000	12.2
4	Kiat Ananda Cold Storage, PT	30,000	8.1
5	Mega Internasional Sejahtera, PT	21,000	5.7
6	Indomaguro Tunas Unggul, PT	15,000	4.1
7	Dharma Samudera Fishing Industries, PT	14,000	3.8
8	Savina Cold Storage	9,000	2.4
9	Wahana Cold Storage, PT	7,000	1.9
10	Lion Super Indo, PT/Super Indo	6,600	1.8

To maintain a cold storage facility requires a substantial investment, and it's not surprising that many companies do not have their own cold storage facilities.

Rather, many of them rent or cooperate with cold storage owners.

This makes it is very difficult to know the exact amount of cold storage operation in Indonesia.

Indonesian cold chain capacity is growing

Projection of Potential Demand for Cold Storage in Indonesia, 2019–2024 Capacity (tons)

Additional Production Capacity (thousand tons):

2019 462,750 an annual increase of 92,550t

2020 548,359 an annual increase of 85,609t

2021 631,161 an annual increase of 82,802t

2022 692,384 an annual increase of 61,223t

2023 765,084 an annual increase of 72,700t

2024 824,760 an annual increase of 59,677t

- **YoY Tonnage increase since 2021 Averaging 61,100t**

The cold chain logistics market continues to be dominated by cold storage in the form of warehousing rather than transportation. Cold Storage services include refrigerators, chilled rooms, thawing rooms, freezer rooms, blast chillers and blast freezers.

Greater Jakarta has more than 40 cold chain companies with major location of cold storage being North Jakarta, West Jakarta, and Bekasi.

The basic storage types can be divided simply into Industrial and Commercial. Commercial sites are for business activities such as logistics and supply chain management hubs and generally have the capacity of below 500 tons, these units are generally leased or rented.

The industrial storage facilities have more than 500 tons capacity and function usually as a part of production facility. However, there is a growing trend of new build cold storage warehouses.

One of the noted changes evident post the pandemic is that Cold Chain and refrigerated Cold storage always used to be pallet in and pallet out.

Now, like many sectors, refrigerated is transitioning to pallet in and case out or pallet in and singles out.

This is largely driven by Ecommerce and cold chain players recognizing that the increase of more B2C (Business to Consumer) & D2C (Direct to Consumer). Which in turn will require more, smaller, storage spaces, usually for fulfilment purposes.

Indonesia is the largest archipelagic country in the world and the second largest producer of seafood. Data from the latest Statista report indicate that revenue in the Indonesian Processed Fish & Seafood segment will be US\$6.93bn in 2022. The market is expected to grow annually by 6.87% (CAGR 2022-2027). Consumption numbers in relation to total population figures, per person revenues of US\$25 will be generated in 2022.

In the Processed Fish & Seafood segment, volume is expected to amount to 892.5mkg by 2027. The Processed Fish & Seafood segment is expected to show a volume growth of 4.2% in 2023. The average consumption volume per person in the Processed Fish & Seafood segment is forecasted to be 2.8kg in 2022. The marine fisheries, food industry, which includes fishing, freezing, cooling, processing, and preserving, as well as industry and trade supporting business activities.

Importance of the Indonesian cold chain

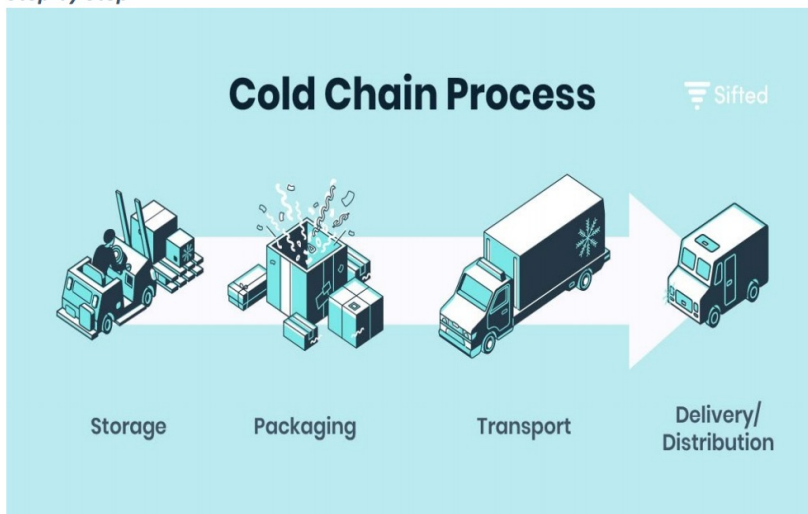
Consumers are rarely aware of the backstage actions that occur when you order a product, online or in-store. We purchase medications, food, and beverages from businesses and shops, with no second thought about how they arrived there.

Or we enjoy a nice dinner at a local restaurant, unaware of how the meat was delivered. But we do expect a quality product. At the same time, eCommerce has driven changes in consumer demand for the speedy delivery (two-day, one-day, same-day) of quality, fresh goods. Consumers want their product in the best condition, and they want it quickly.

Cold chain logistics involves preparing, storing, transporting, and monitoring the products through various elements.

Manufacturers rely heavily on cold chain logistics to ensure their products are in good shape “Fit for purpose” when they arrive at their destination.

Step by Step:



Cold chain care

Suppliers, manufacturers, and carriers are all aware of the critical nature of maintaining temperature-sensitive goods. They understand the consequences of a broken cold chain and cannot afford gaps or fluctuations.

In addition, there are safety risks with these complex deliveries that could result in an inferior product and possible sickness to the end-user.

For example, food products are associated with foodborne illness when not kept at an adequate temperature.

If the box spent a few hours in transit 5/10 degrees over or under their set temperature, the customer is now at risk.

The product has now been compromised due to a lack of cold chain maintenance.

These risks only double when it comes to medications and pharmaceutical goods, which the Covid-19 pandemic further highlighted through the transportation of temperature-sensitive vaccines.

Temperature sensitive products also need to be monitored each step of the supply chain link with data tracking technology to ensure their viability for end-use.

Any break in protocol will result in the loss of the product due to spoiled ingredients that must be transported at set temperatures.

Loss of vaccines means loss of resources, money, time, and possible lives.

Once the vaccine has been compromised, it must be thrown out. The stakes are high and dangerous for manufacturers whose products' livelihood depends on a perfect cold chain.

Cold chains are no different than any chain



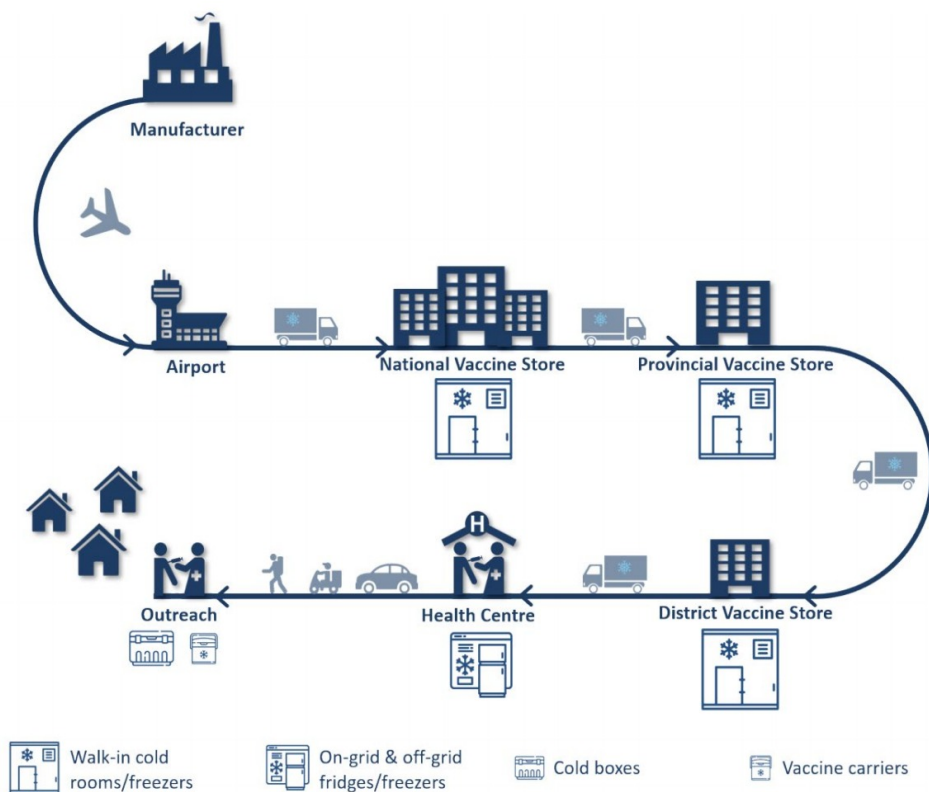
They are only as strong as the weakest link.

Examples of various cold chains

A **vaccine cold chain** maintains the quality of vaccines by correct handling, **control, storage, and transportation** within an appropriate **temperature range**, from the time of manufacturer to the moment of administration.

A typical vaccine flow for a routine immunization program, includes the **infrastructure, transport, cooling equipment and visibility** from the point of manufacturer through to the health center and/or outreach service point where it is administered.

The full cycle is **completed with bio-waste disposal and reverse logistics** of reusables equipment.



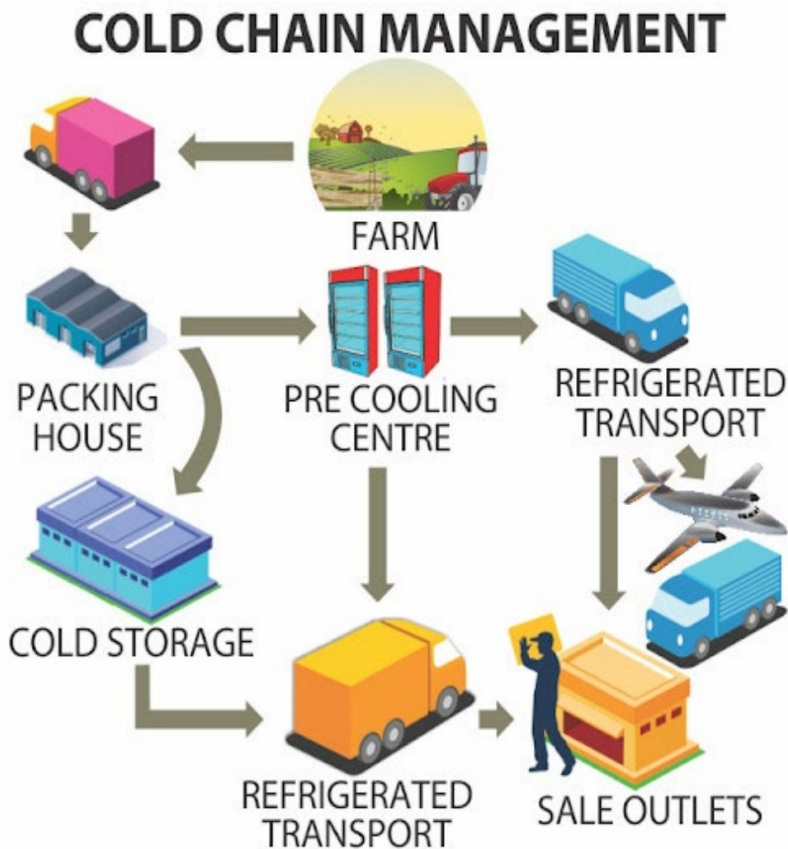
Generic cold chain

Products that require temperature control to maintain integrity or fresh and perishable goods are typically handled via the “Cold Chain”

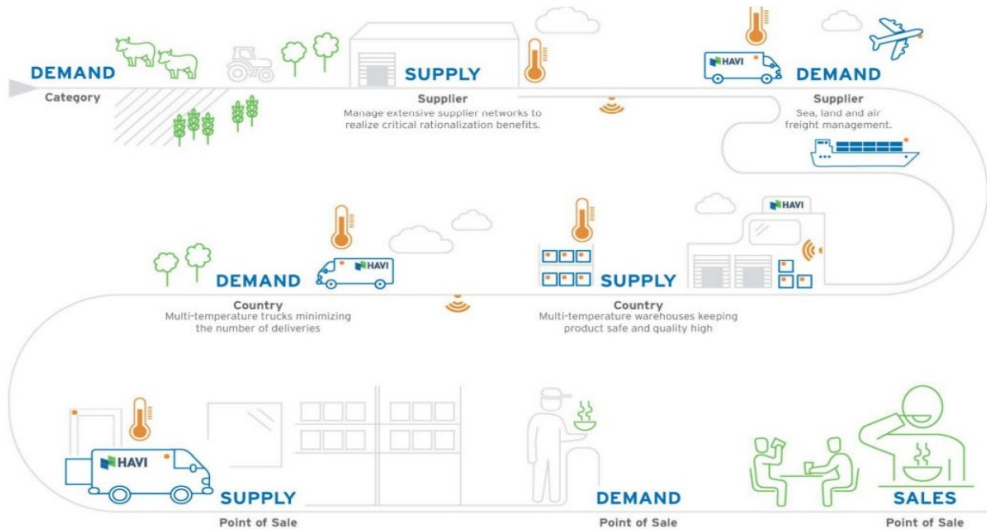
These Cold Chains maintain the quality of the product by ensuring correct handling, control, storage, and transportation within an appropriate temperature range, from point of supply to the moment of sale.

A typical product flow for a temperature-controlled product, will require the infrastructure, transportation, cooling equipment and visibility across the E2E chain.

The full cycle is performed for grown foods and proteins like Fish & Seafood, Poultry, Beef Pork etc. and will usually include reverse logistics for any reusable equipment.



Foodservice cold chain



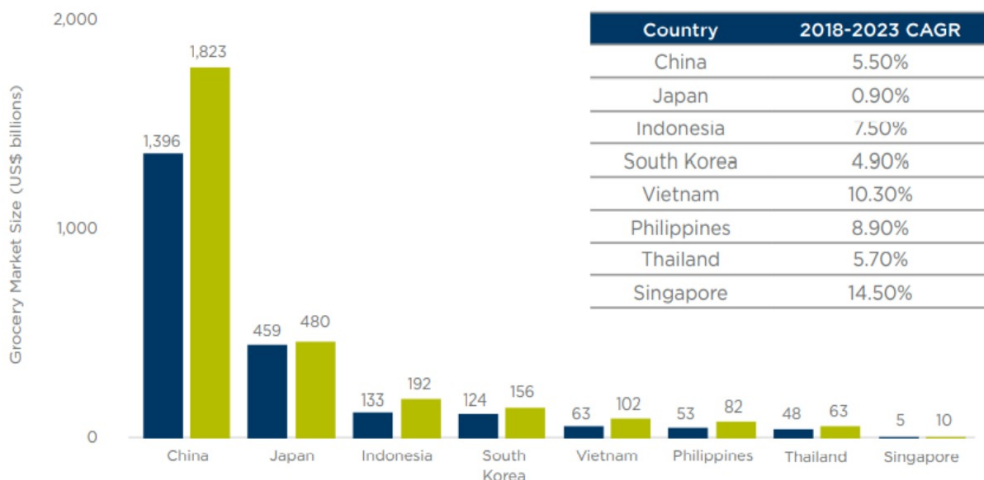
Demand drivers of growth

The Grocery market is a key driver of Cold Chain Logistics, as cold storage reduces food losses during transport & storage.

Growing affluence of consumers has led to increased demand for fresh products causing supermarkets and their suppliers to increase capacity of cold chain logistics.

Cold storage logistics is a sector that has gained traction in recent months due to the growing opportunities for drug and vaccine imports and exports, coupled with the spike for online retail and food delivery services.

Asia Pacific Grocery Market Growth



Prospects look good

Over the medium to long term, increasing affluence of the middle class in the region, fueled by rapid economic development will also underpin the strong pace of growth of the cold chain market.

According to Ernst & Young, Asia Pacific's middle class will amount to 3.3 billion in 2030 or two-thirds of the global middle class, up from just one-third in 2009.

The outlook for the cold storage logistics sector is bright as its fundamentals have been upgraded given the consumer behavioral changes for grocery shopping and surge in demand for biopharmaceuticals.

Triple EFF's View

In this briefing we have provided you with some insight into the Cold Chain Landscape of Indonesia. If you know anything about moving goods across the world's largest archipelago, you will be aware of the challenges involved.

Triple EFF has worked in Logistics & Supply Chain in Indonesia for almost 15 years and along the way we have accumulated a lot of knowledge.

We are of the firm belief that ***"Knowledge not shared is Energy wasted"***.

This is one of the main reasons why we have prepared this paper, the other reason is to help you on your way to get to ***"What good looks like for your business"***.



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Contact Us

Call Us - +62 818150373

Email: findus@tripleeffconsulting.com

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