



## **KeyNote: 'Overview of Global Cold Supply-Chain System & Challenges'**



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# Cold Chain Industry Overview & Competitiveness

\$250 billion



Social responsibility



\$21.6 billion by 2025



1/3 of food produced is wasted



Spend on perishables is escalating



[www.coldchainconnect.net](http://www.coldchainconnect.net)



# Global 3PLs revenue earned in the food & groceries market from 2008 to 2018 (in billion U.S. dollars)\*

This statistic illustrates the third-party logistics revenue generated worldwide in the food and grocery market from 2008 to 2016 and gives estimations for 2017 and 2018. In 2016, 3PL revenue in the food and grocery market amounted to about 17.5 billion U.S. dollars.



GLOBAL REVENUE OF THE 3PL MARKET

273.18bn USD

GLOBAL REVENUE OF THE HEALTHCARE 3PL MARKET

16.8bn USD

GLOBAL 3PL REVENUE EARNED IN THE FOOD AND GROCERIES MARKET

17.5bn USD



# Cold Chain Industry Overview & Competitiveness



Figure 5: [Sample Storage Temperatures](#)

$>65^0$  F

- Processed Foods (pickled, dried, cooked)
- Cooking oils
- Onions

$50^0-65^0$  F

- Sub Tropical Fruits and Seeds
- Chocolate

$32^0-50^0$  F

- Fresh Fruits and Vegetables
- Milk and Dairy Products
- Flowers and Eggs

$<0^0$  F

- Meat, Fish and Poultry
- Frozen Fruits and Vegetables
- Ice Cream



# Criteria for Cold Chain Expansion

Businesses engaged in international cold chain activity assess markets against specific criteria when selecting locations for expansion. The four primary criteria, according to industry sources, include:

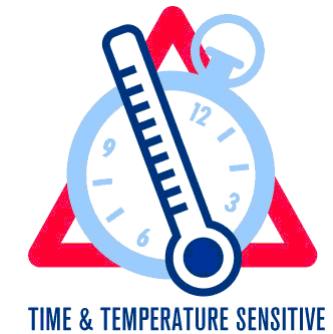
- ✓ governmental regulatory environment,
- ✓ whether there is a trainable skilled labor force,
- ✓ the infrastructure environment and
- ✓ the potential demand within the country or region.



alamy stock photo



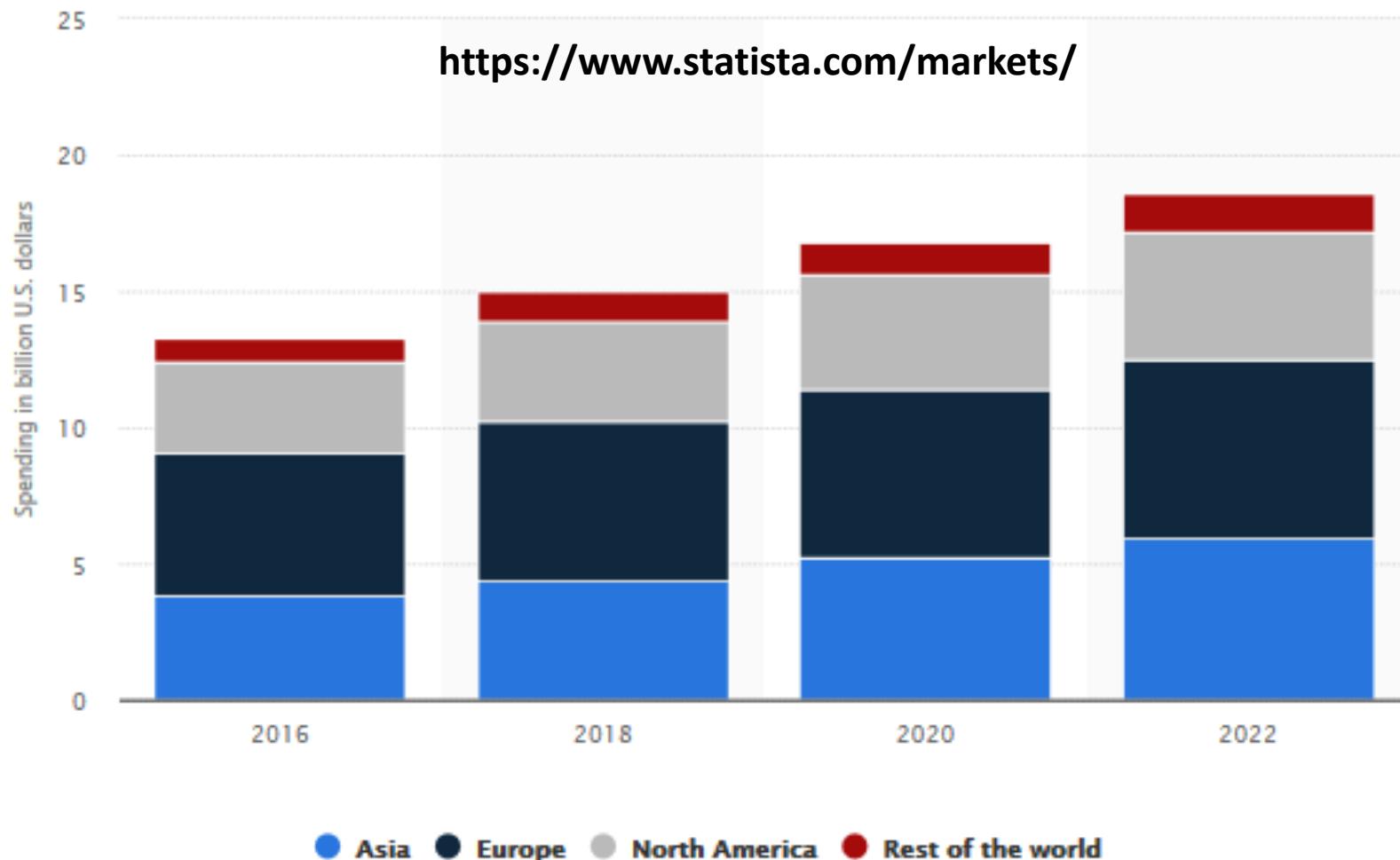
# Global Cold Chain Industry Overview & Competitiveness



TIME & TEMPERATURE SENSITIVE

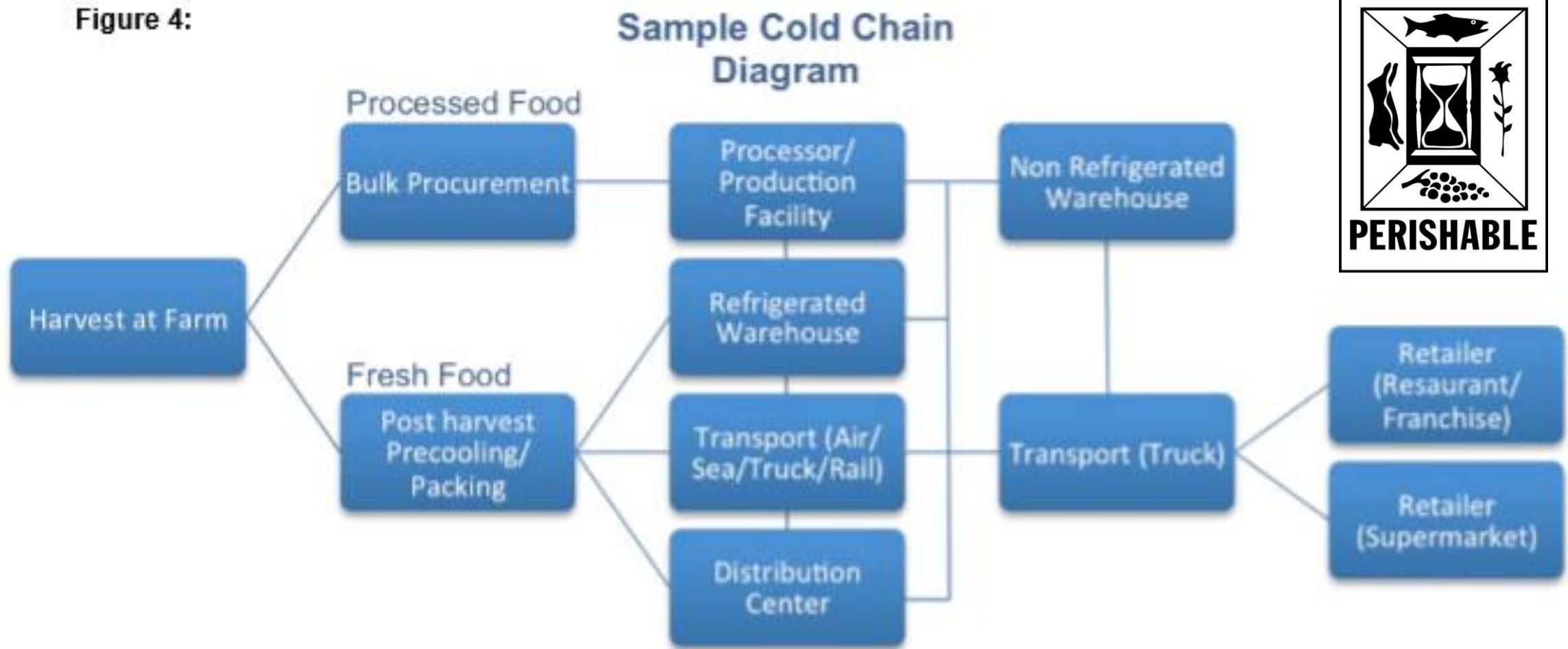
# Projected Cold Chain logistics spending, transport & packaging from 2016 to 2022, by region (in billion U.S. dollars)

This statistic depicts the projected spending on cold chain logistics, transport and packaging from 2016 to 2022, broken down by region. In 2018, spending on cold chain logistics, transport and packaging in North America is expected to amount to 3.7 billion U.S. dollars.



# Cold Supply-Chain Flow for Processed & Fresh Foods

Figure 4:

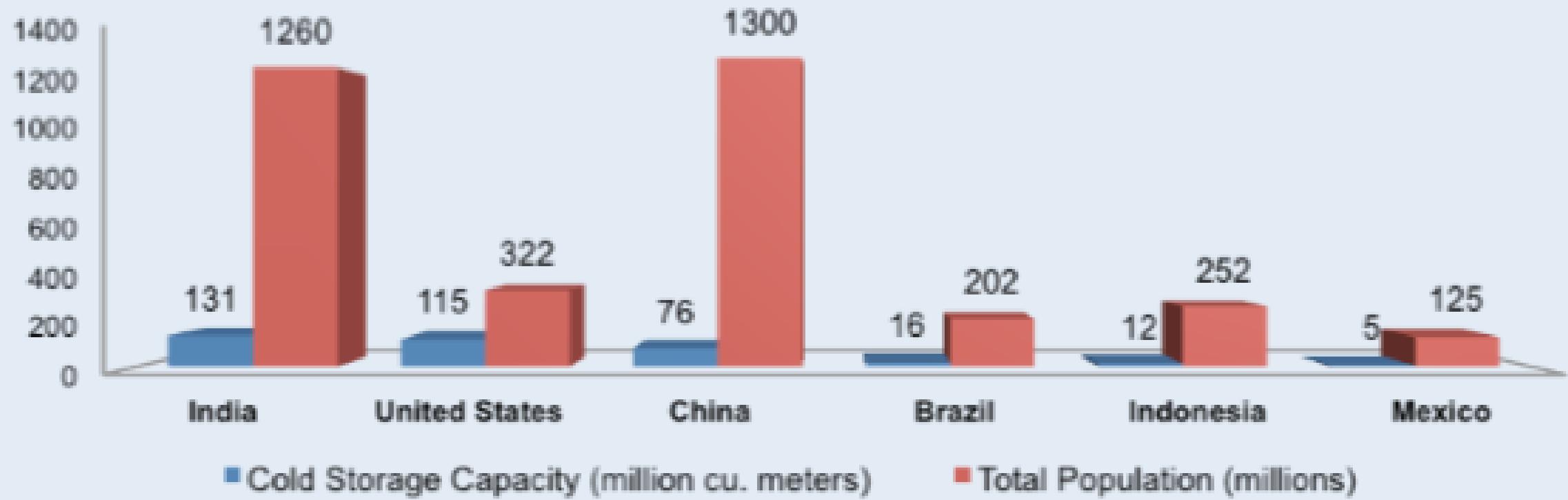


# Cold Chain – Delivery & Storage



# Cold Chain Industry Overview & Competitiveness

Figure 3: Cold Storage vs Total Population



Source: (International Trade Administration) ITA Cold Chain Top Markets Report



# Pharma Cold Chain Logistics is a \$12.6 billion global logistics industry

Pharmaceutical Commerce's Annual Cold Chain Sourcebook shows 52% growth between 2014 and 2020



# Pharma Cold Chain Logistics is a \$12.6 billion global logistics industry

plastic experiment genome technician protection science professional **test** health disposable female **vaccine** scientist work microbiology control **outbreak** pharmaceutical recording **blood** man **biochemistry** sample disease virus liquid biology discovery **ebola** physiologist **medication** cancer treatment **statistics** **research** **clinical** **trial** **medical** **laboratory** **chemistry** **pharmacists** **viral** **oncology** **tools** **improvement** **knowledge** **chemistry** **tech** **bio** **lab** **human** **job** **biologist** **company** **clinic** **safety** **analysis** **business** **medium** **preclinical** **care** **woman** **corporate** **illness** **results** **tube** **trials** **chemist**



## FACTS ON PHARMACEUTICALS SHIPPING

Medicines are the lifeline for Human Species, yet we know so less about it. Let us take you through some of the facts behind the pharmaceutical shipping.

### 1 PRECISE TEMPERATURE

Just 2°C of temperature fluctuation could totally wreck the pharmaceutical goods.

### 2 USE OF THERMAL COVERS

Pharmaceuticals industry are avid users of thermal covers which help in securing the products against sunlight, humidity, etc. They help in keeping consistent temperature with a range of 15°C to 25°C.

### 3 TEMPERATURE-CONTROLLED TRANSPORTATION

7 of 10 top pharmaceutical items require temperature-controlled haulage.

### 4 CRYOGENIC/SPECIAL CONTAINERS

Biologic matter e.g. hemoglobin, tissue, regenerative matter and clinical cases are put away in a cryogenic containers that can hold the temperature at - 150°C for at least than 10 days.

### 5 STEADY TEMPERATURE

Pharmaceutical items need to be kept up at an exact temperature to hold their effectiveness. Slight change in container temperature can hamper the goods

### 6 SMALL ERROR BIG CONSEQUENCES

A slip in temperature can cause a loss of \$150,000 on a small packaged shipment to a Pharmaceutical company



# eCommerce Cold Chain – eLast Mile Fulfillment



# IATA - Cold Chain Industry Overview

**13%**

Average global air freight volume for perishables

For Europe, main inbound markets:

Africa

Central & South America

Middle East & South Asia

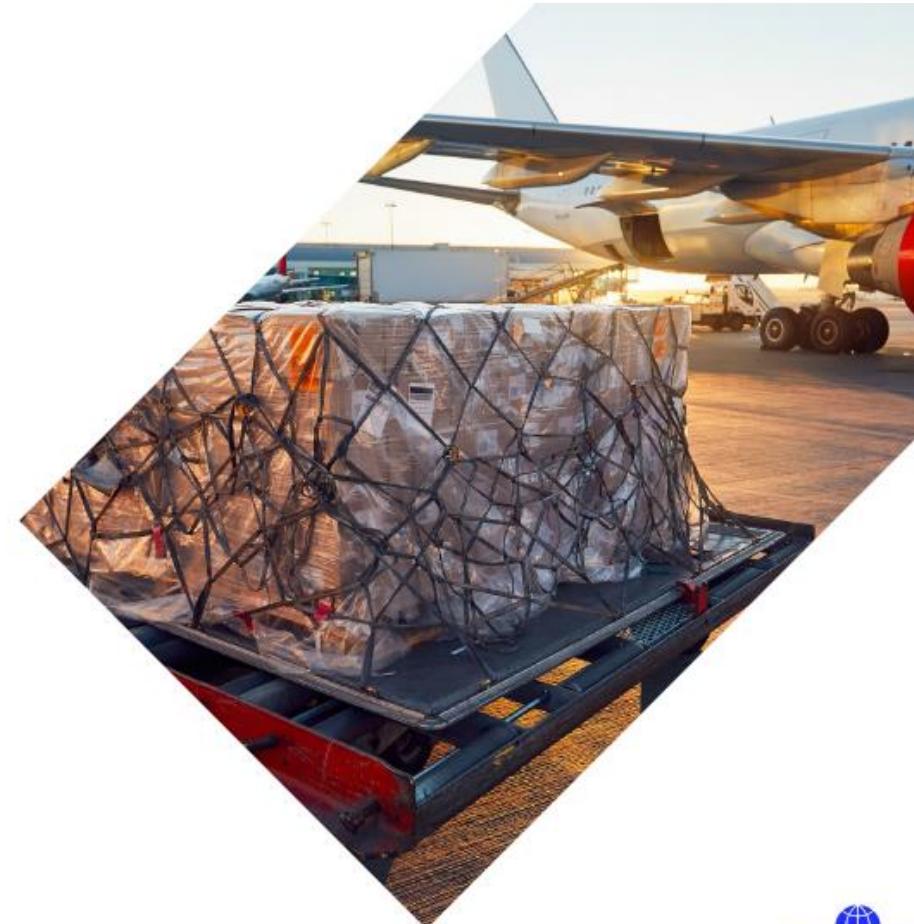
Outbound markets:

Asia Pacific

North America

Middle East & South Asia

5



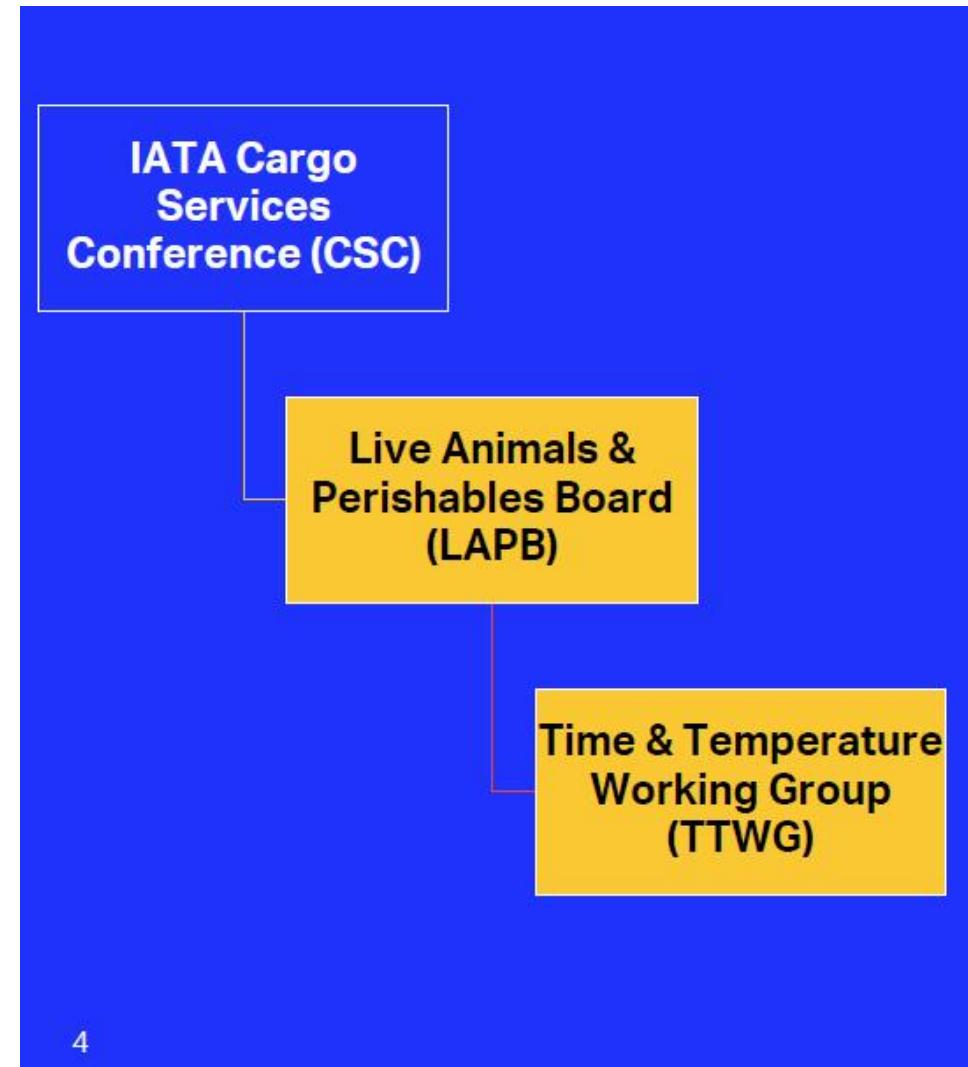
## CEIV Fresh Program



A concerted effort to meet industry concerns and improve the level of competency, infrastructure, quality and training needed to ensure compliant handling and transportation of perishables throughout the supply chain.



# IATA - Cold Chain Industry Overview



## Initial Perishable Transport Consideration

**Industry call to prevent food loss and food waste throughout the supply chain** (Cool Chain Association)

- Consequence of lack of harmonized procedures on practices
- Issue of industry driving its own standards
- Need for increase collaboration

**PERISHABLE GOODS**

- » Increased industry interest and requests to IATA over the last months to get engaged in a CEIV Fresh program
- » This resulted for IATA to accelerate the process of developing a “**CEIV Fresh**” program to investigate the feasibility together with the industry

## Industry Feedback is Driving Improvements

- Lack of standardization in procedures and practices
- Address food wastage, product loss & the safety of food supplies
- Consider social responsibility, & sustainability and communicate actions taken to customers;
- Streamline companies' own processes and increase collaboration
- Retain the business in the air transportation



# IATA - Cold Chain Industry Overview

## IATA CEIV Center of Excellence for Independent Validators



Established following a call-to-action to standardize processes, improve facilities and increase training in relation to the transport and handling of air freight shipments.



# IATA - Cold Chain Industry Overview

## Industry Leverage of Quality & Excellence



Security  
2013



Pharma  
2014



Live Animals  
2018

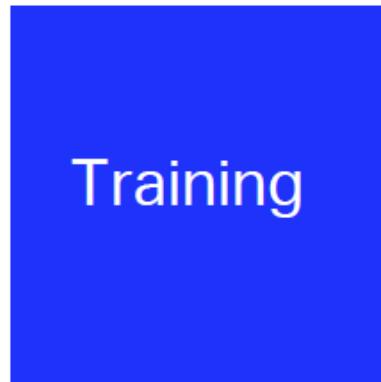


Fresh  
2019



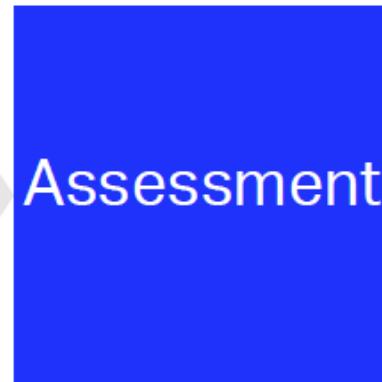
# IATA - Cold Chain Industry Overview

## Industry Leverage of Quality & Excellence

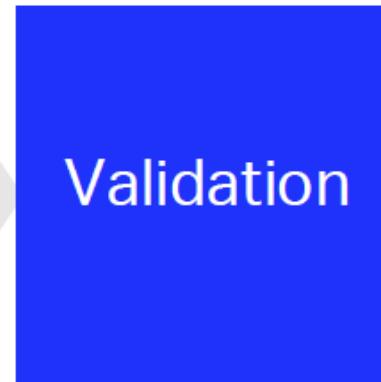


- Each company needs to train 2+ perishable specialists;
- 3-day course;
- In-house or IATA classroom.

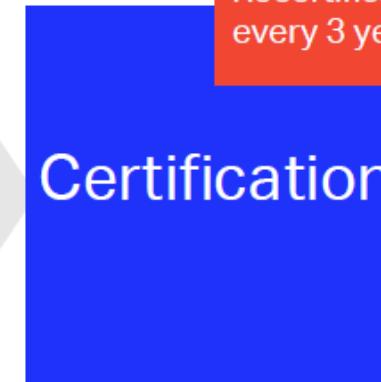
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- On-site assessment by Independent Validator;
- Assessment versus Audit Checklist;
- Comparison against best practice;
- Establish findings, recommendations;
- Develop report.



- On-site validation by Independent Validator;
- Validator to review progress made on recommendations established during the assessment.



Recertification  
every 3 years

- Certification issued, once all major gaps have been closed.



## Benefits of CEIV

- Standardization of procedures and practices
- Enhanced infrastructure
- Limiting food wastage and product loss
- Responsive to consumer demands and expectations
- Regain shippers' trust in air transport
- Recognition for specialized entities
- Increased communication and information sharing
- Elevation of the level of workforce competency



## CEIV Fresh - Status

- Pilot was carried out to determine the feasibility of CEIV Fresh and was completed in April 2019
- Airline, cargo terminal operator and ground handling agents involvement and certified
- CEIV Fresh was launched at the WCS for industry roll-out

### Recognized Facilitator :



### Certified companies:



### Certification in progress:

- 2 Airlines
- 2 Ground handlers



# KeyNote: Cold Chain Industry Overview & Competitiveness

Thank  
you

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# KeyNote: Cold Chain Industry Overview & Competitiveness

*“If you think it's expensive to hire a professional to do the job; wait until you hire an amateur”*

- Paul Neal "Red" Adair, 1964 -

