International Maritime Transportation Initiatives for Enhancing Logistics Efficiency & Securing Supply Chains

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Contents

Philippines Logistics Performance Index

- **Performance of the Philippines has improved each year** according to Logistics Performance Index (LPI) published by the World Bank.

Item	2007	2018	2023
Customs	2.64	2.53	2.8
Infrastructure	2.26	2.73	3.2
International shipments	2.77	3.29	3.1
Logistics competence	2.65	2.78	3.3
Tracking and tracing	2.65	3.06	3.3
Timeliness	3.14	2.98	3.9
LPI Score	2.69	2.9	3.3
World Ranking	65	60	43

Source: The World Bank “Logistics Performance Index (LPI)” https://lpi.worldbank.org/

Thoughts on Japanese Logistics Operators in the Philippines

(Current situation and issues at the Port of Manila)

- Compared to five years ago, **chronic congestion has been significantly reduced.**

- Pending issues
  - **Improve crane and container yard capacity utilization**
  - Reduce **offshore waiting time**
  - **Digitalize customs clearance procedures**, etc.

(Challenges for expanding cold chain logistics)

- Different **independent quality standards** followed by overseas enterprises

- Inadequate number of **engineers involved in production of refrigeration or freezing equipment**

- Change in **consumer awareness of "freshness"** (Strong sense that "freshly picked" = "fresh")

Geopolitical Risks in International Maritime Transport

- Uncertainty in **the East Asia**
- Serious situation in **the Middle East**

  (Avoiding transit through the Red Sea due to Houthi attacks.)

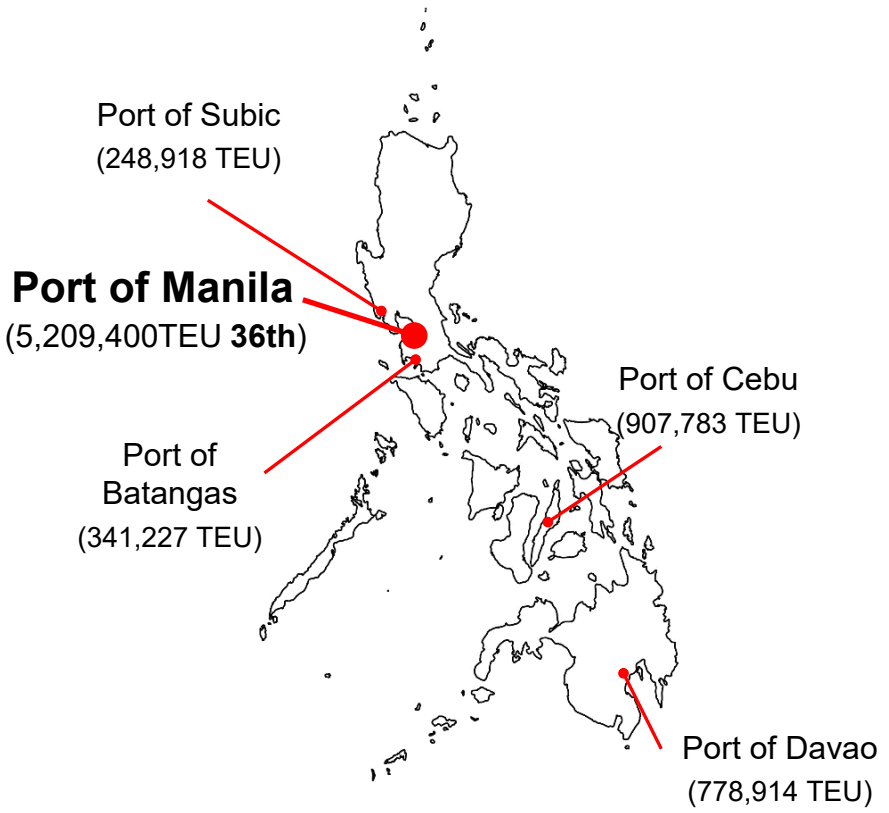
Galaxy Leader

Source: Marine Traffic

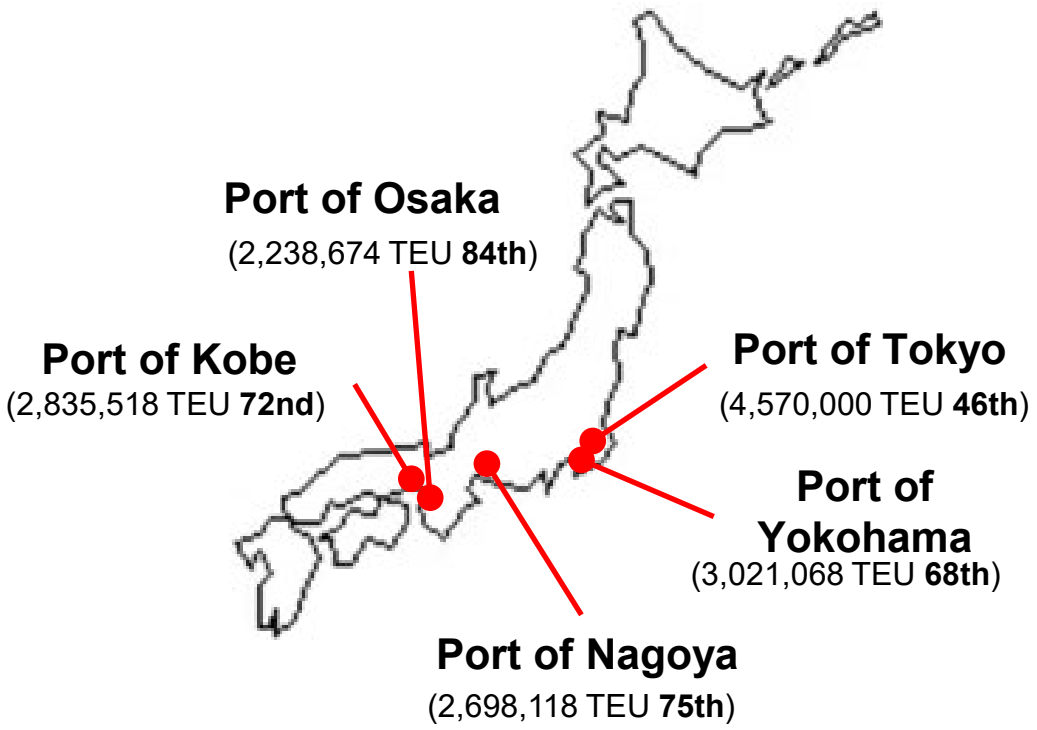
- **Russia-Ukraine conflict** and the suspension of insurance coverage
- Frequent **acts of piracy** (Straits of Malacca and Singapore, Gulf of Aden, Gulf of Guinea, etc.)

Comparison of Major Ports in the Philippines and Japan

PHILIPPINES



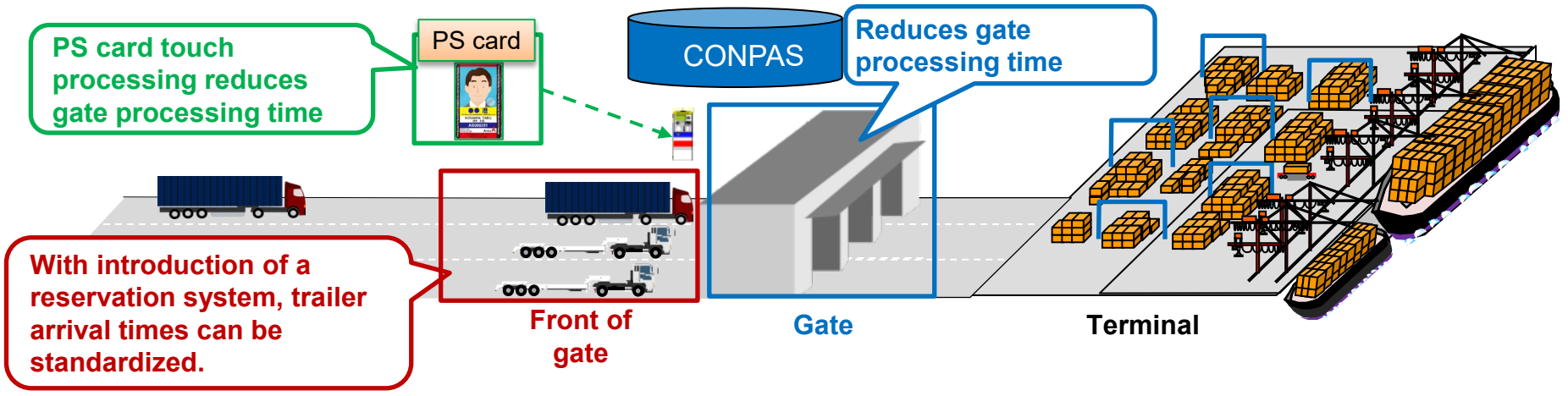
JAPAN



*Compiled by MLIT based on Lloyd's List and statistical data from port authorities.
*Figures in () indicate container handling volume in 2023 and world ranking (top 100).

Introduction of Container Fast Pass (CONPAS)

- Container Fast Pass (CONPAS) is a system that aims to **eliminate congestion in front of gates with introduction of a reservation system**, thereby enhancing container logistics efficiency.



[Yokohama Port Minami Honmoku Terminal]

(Reduction in waiting time)

Before introduction: **Average waiting time in front of gate was approx. 30 minutes**

⇩

After introduction: **Average waiting time in front of gate reduced to approx.7 minutes**

[Kobe Port PC-18]

(Reduction in gate processing time)

Before introduction: **Average gate processing time was 1 minute 34 seconds**

⇩

After introduction: **Average gate processing time reduced to 23 seconds**

Reading a PS card

Upgrading Container Terminal Gates

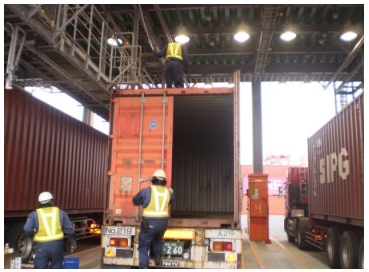
● In response to trailer congestion in front of the terminal and labor shortages at land transport companies, we are supporting **upgrading of container terminal gates to speed up and streamline gate operations**.

<Current Gate Operation>

- On-site work required, such as exchanging documents and checking for damage.

  *Each trailer takes a maximum of 3-5 minutes.
- Longer waiting time due to congestion in front of gates.

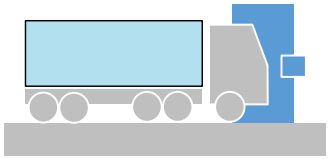
Hand over destination card (placard) in the terminal



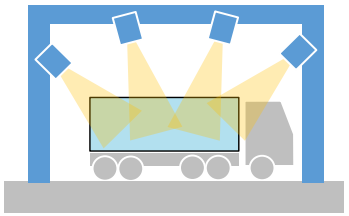
Visual inspection of container damage

<Introduction of highly functional gates>

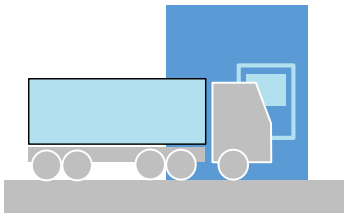
- Introduction of a visitor reservation system has helped to level out the number of trailers visiting the site and make reservation information checks more efficient.
- Introduction of a damage check system has made container visual inspections more efficient.
- Advanced verification of delivery information, electronic destination instructions, and more efficient document exchange.



○ Check reservation information



○ Check container damage
○ Check container & seal numbers



○ Pre-check delivery information
○ Issue destination instructions
○ Return Equipment Interchange Receipt (EIR)

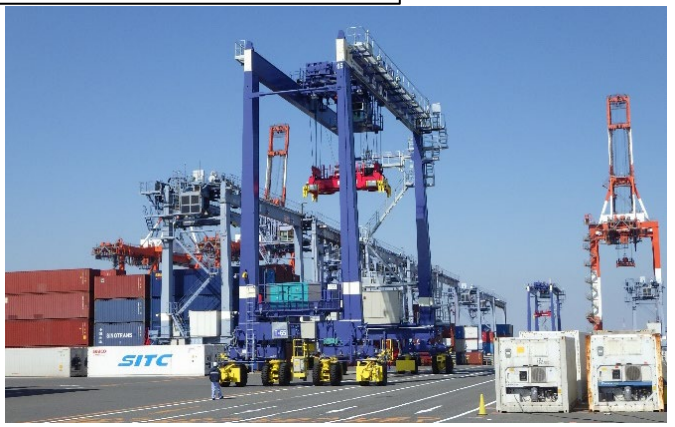
Introduction of Remote Control RTG

- The introduction of remotely-operated rubber-tired gantry (RTG) cranes was supported to improve the working environment and cargo handling capacity at container terminals.

Remote Control Room

Comfortable Safety

Remotely Operated RTG



Nabeta Pier Container Terminal, Port of Nagoya

■ RTG cranes at strategic international container ports

	Yokohama Port Honmoku BC Terminal	Port of Kobe Port Island District PC18	Tokyo Port Aomi District Aomi Public Container Terminal	Port of Kobe Port Island District PC14-17
Number of cranes	2 units	18 units	26 units	12 units
Project period (schedule)	FY2020 to 2022	FY2020 to 2026	FY2023 to 2029	FY2023 to 2026

Promoting Flexible Container Terminal Use

● In April 2021, the Port of Yokohama launched **integrated use of container terminals** at Minami Honmoku Pier.

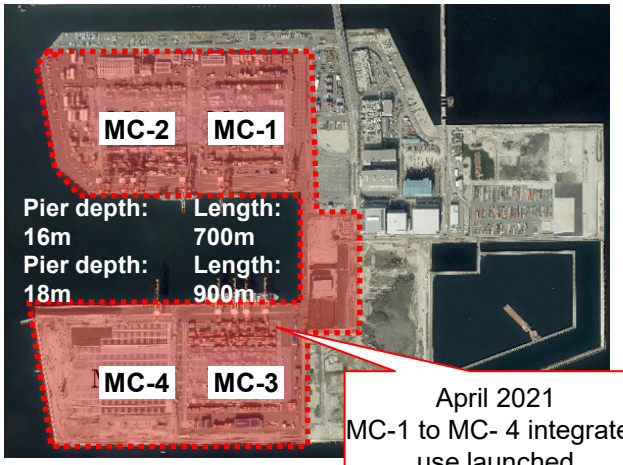
■ Before

	MC - 1	MC - 2	MC - 3	MC - 4
Standard	Depth 16m, length 700m		Depth 18m, Length 400m	-
Terminal Renter	Maersk Nissin	Maersk	Mitsubishi Logistics	-
Shipping company	Maersk, TS Line, SITC, etc.		ONE, Hapag Llyod	-

■ From April 2021

*As of the end of January 2024

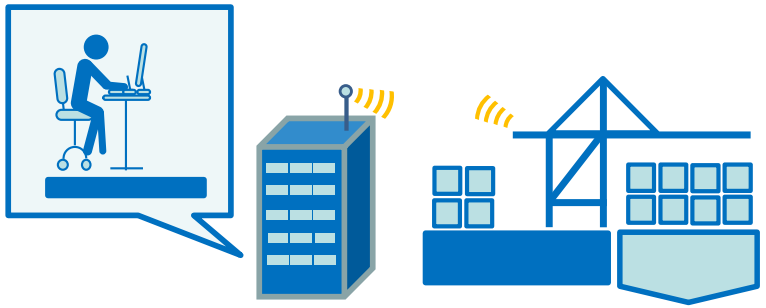
	MC - 1	MC - 2	MC - 3	MC - 4
Standard	Depth 16m, length 700m		Depth 18m, length 900m	
Terminal Renter	Maersk Nissin	Maersk Mitsui O.S.K. Lines Kawasaki Kisen Kaisha	Maersk	
Shipping company	Integrated use: 2M (Maersk, MSC) The Alliance (ONE, Hapag Lloyd, Yang Ming, HMM) Coastal shipping company			



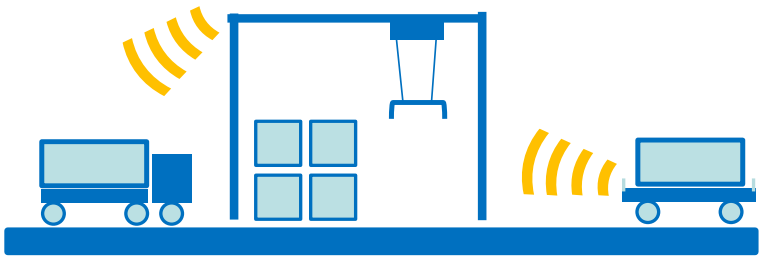
● April 6, 2021
Utilization of the facility as a single unit allows ONE's large container ships to dock
・Ship name: ONE FALCON
・Total length 364.15m, draft 15.79m, width 50.6m
Maximum capacity: 4,026 TEU

Initiatives for Realizing AI Terminals

- We are aiming to ensure **a favorable working environment, improve productivity**, and promote the realization of **AI terminals** by introducing AI, ICT, and other technologies at Japanese container terminals.

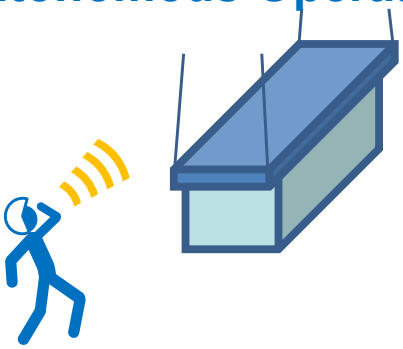


Improving the productivity of cargo handling equipment (Remote Control System)



Enhancing the efficiency of loading/unloading at terminals (Autonomous Operation)

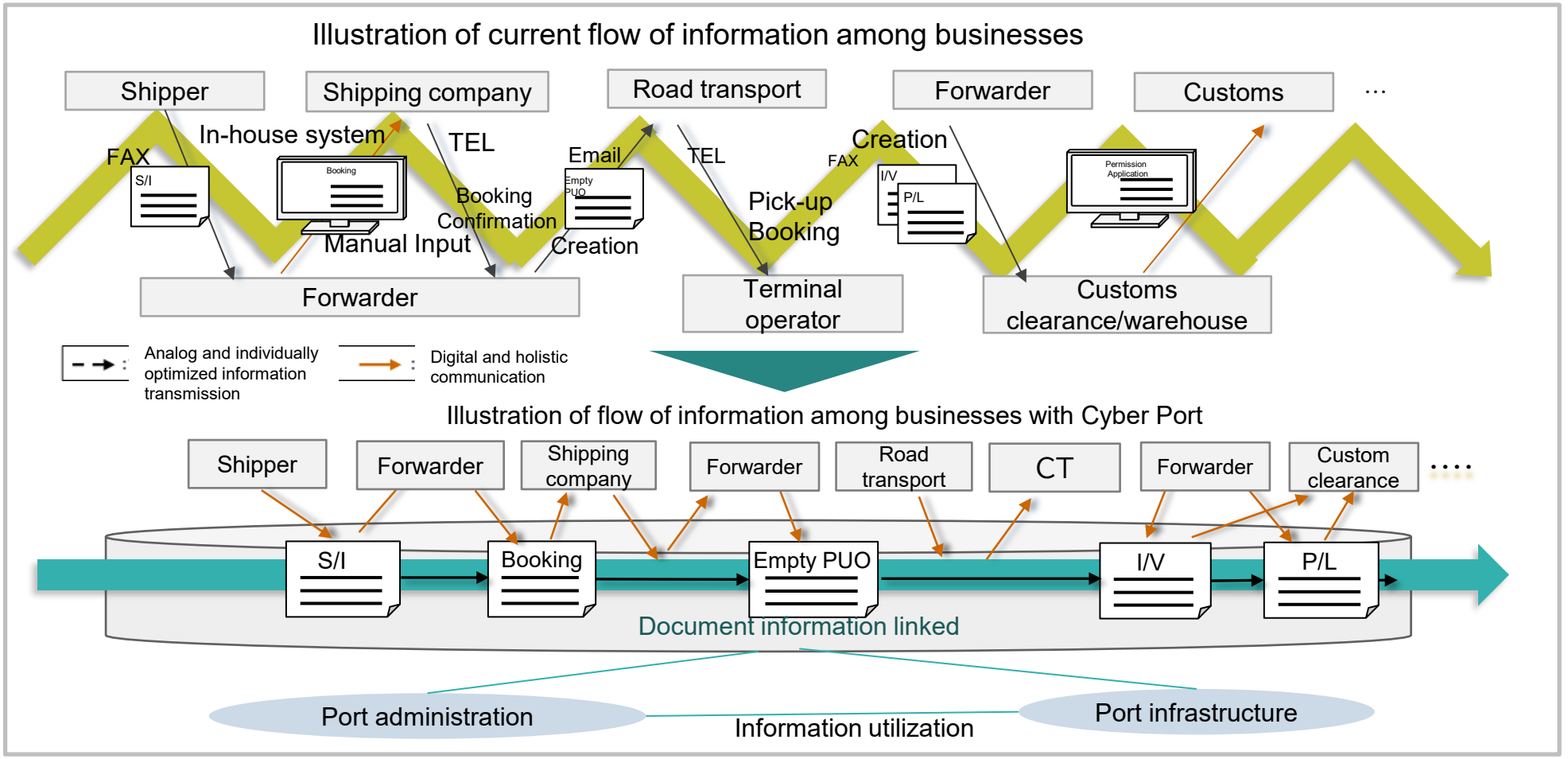
Advances in terminal operations (AI-based placement planning)



Enhancing port personnel safety and work efficiency (Accident prevention system)

Initiatives for Realizing AI Terminals

- Container logistics procedures for private operators, which are a mixture of paper, telephone, and e-mail, will be **digitized and optimized** with **Cyberport, a data platform** administered by MLIT, to **improve overall container logistics productivity.**



Cyber Attacks Caused System Outage at Japanese Port

- Growth in logistics digitalization requires **greater vigilance against cyber risks**, including thorough **information security measures**.

- On July 4, 2023, a system outage occurred at **Nagoya Port due to a cyber attack**, resulting in a loss of **port functions for approximately three days**.

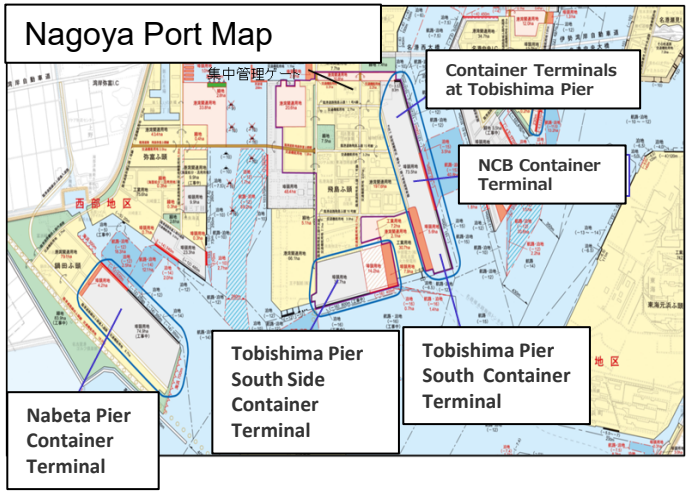
[Overview of system outage]

<Target>
Nagoya Unified Terminal System (NUTS) *

*System centrally manages container loading and unloading, as well as arrival and dispatch at Nagoya Port's five container terminals.

<Cause>
Malware (ransomware)

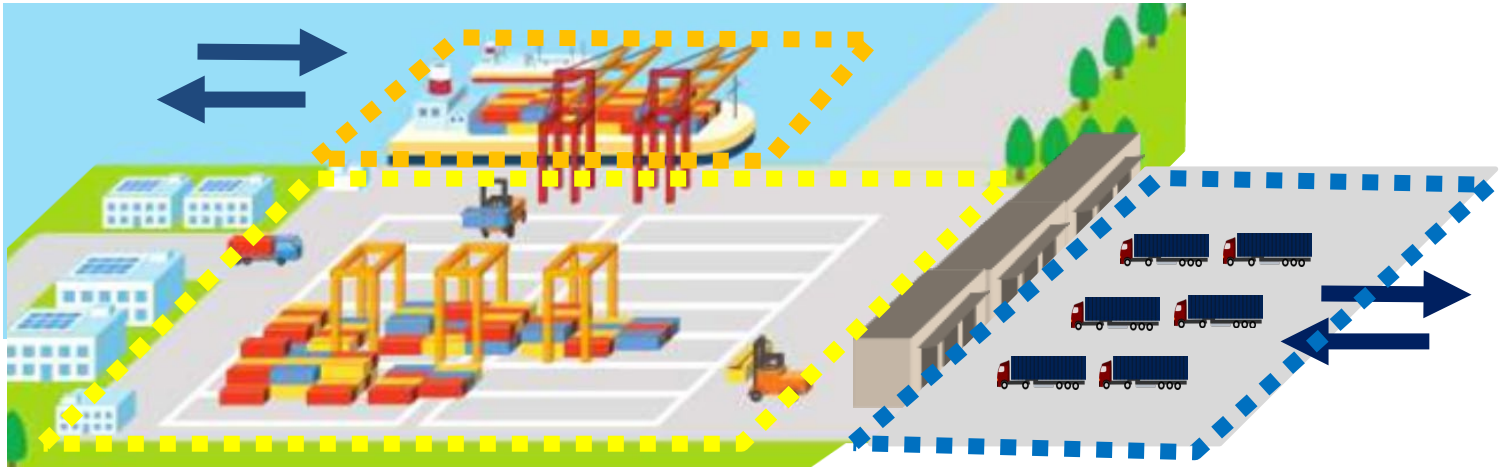
<Impact>
During the three days from July 4 to 6, 2023,
- 37 ship loading/unloading schedules affected
- Approximately 20,000 containers affected (estimate)



Carbon Neutral Port Certification for Container Terminals

- Promoting **competitive ports that meet shippers' and shipping companies' need for decarbonization** and are ports of choice from the perspective of **sustainability.**

[For vessels]
- ✓ Provide shore power supply, etc.
- ✓ Supply zero- and near zero-emission fuel to ships

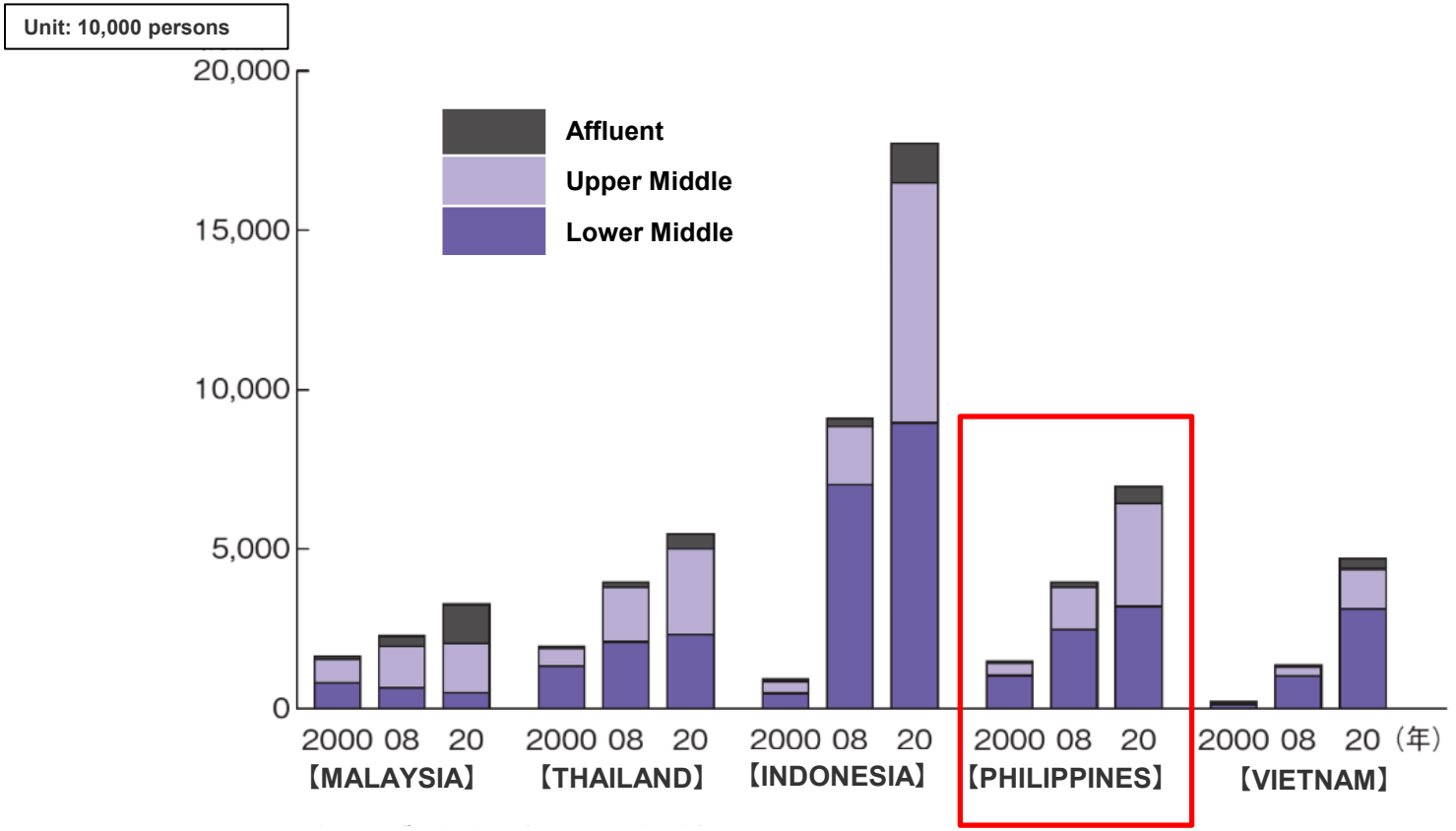


[At container terminals]
- ✓ Use renewable energy
- ✓ Decarbonize cargo-handling equipment (Gantry cranes, transfer cranes, etc.)
- ✓ Switch to LED lighting in yards

[In back yards]
- ✓ Introduce reservation system to reduce vehicle congestion at gates

Growth in Logistics Demand in ASEAN

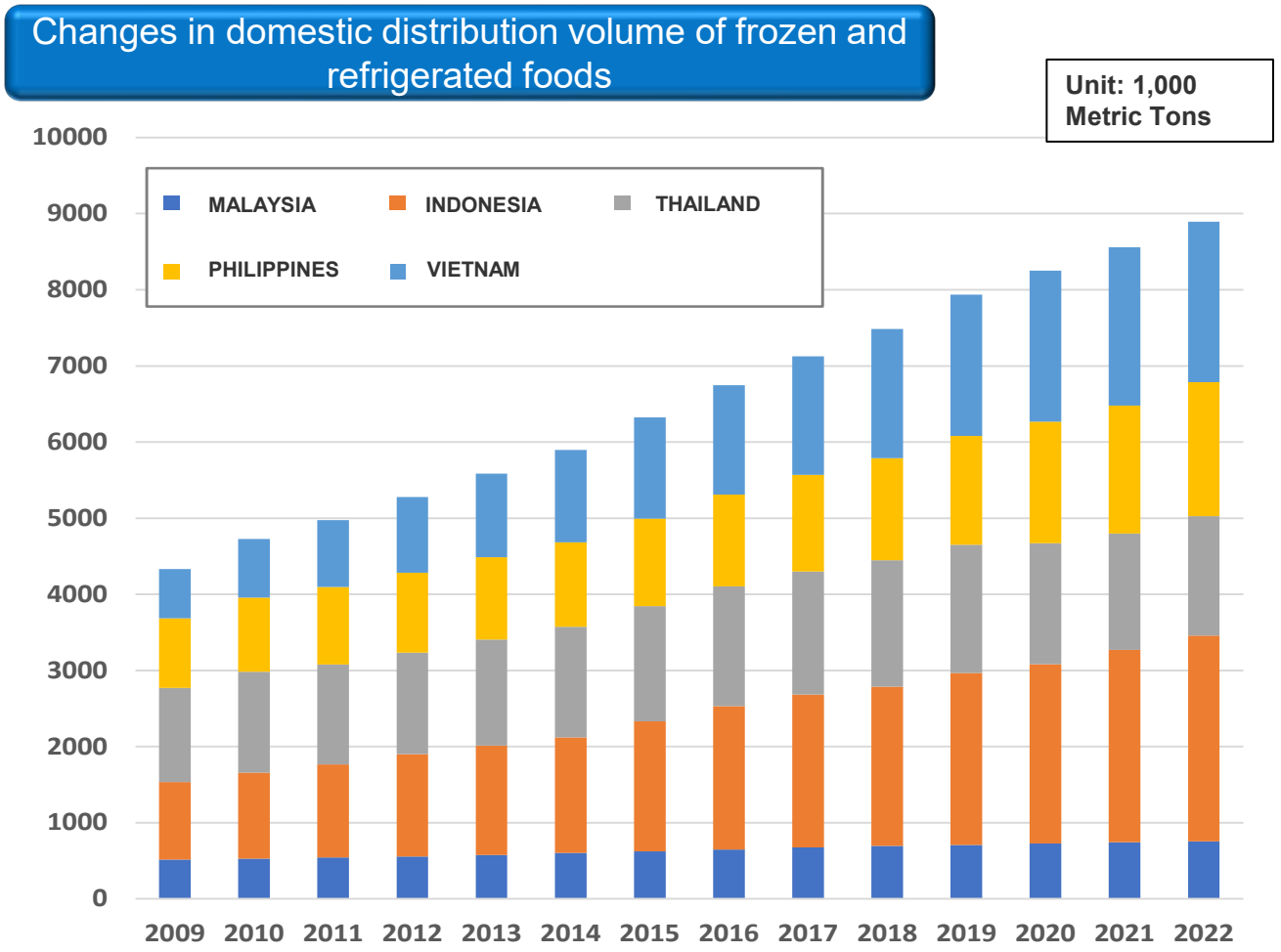
- In many ASEAN member states, **the middle class has grown** and is expected to **continue to grow.**
- As people's standard of living improves, **logistics will provide greater added value**.



*Figures for 2020 are estimates by Mizuho Research Institute.
Data prepared by Mizuho Research Institute based on Euromonitor, United nations, "World population Prospects"

Expanding Demand for Cold Chain Logistics in ASEAN

- As people's lifestyles diversify, **demand for refrigerated and frozen foods** increases, and **so does the demand for cold chain logistics.**



Euromonitor data

Current State & Challenges for Cold Chain Logistics in ASEAN

State of cold chain logistics development

- Lack of knowledge regarding how to handle refrigerated and frozen cargo (cargo exposed to outside air, etc.)
- Unstable power supplies for refrigerated and frozen cargo warehouses
- Inadequate road infrastructure, etc.

Social issues in logistics

Serious food waste problem

90% of food loss and waste occurs in the manufacturing & distribution stages

Manufacturing & distribution stages

90%

Consumption stage

10%

Source: Food and Agriculture Organization, United Nations

Serious food hygiene issues

Frequent foodborne illnesses and deaths

Region	Southeast Asia
Foodborne illness	150 million cases/year
Foodborne deaths	175,000 people/year

Source: WHO

Benefits of Cold Chain Logistics

(Effects of cold chain logistics)

- **Increased sales volume** due to less loss in the manufacturing and distribution stages
  - ・**Higher income for agricultural workers**
  - ・**Greater added value for the agricultural sector**
- Cold chain logistics contributes to the **advancement and modernization of domestic industry**, including refrigerated warehouse companies, transporters, and retailers involved in shipment of agricultural products
- **Stable supply of inexpensive food** for consumers who support domestic demand

(Japan's contribution)

- **Human resource development and technology transfer** through pilot projects
- Planned production and shipping, and **creation of quality and specification standards**

Cold Chain Logistics Pilot Project in the Philippines

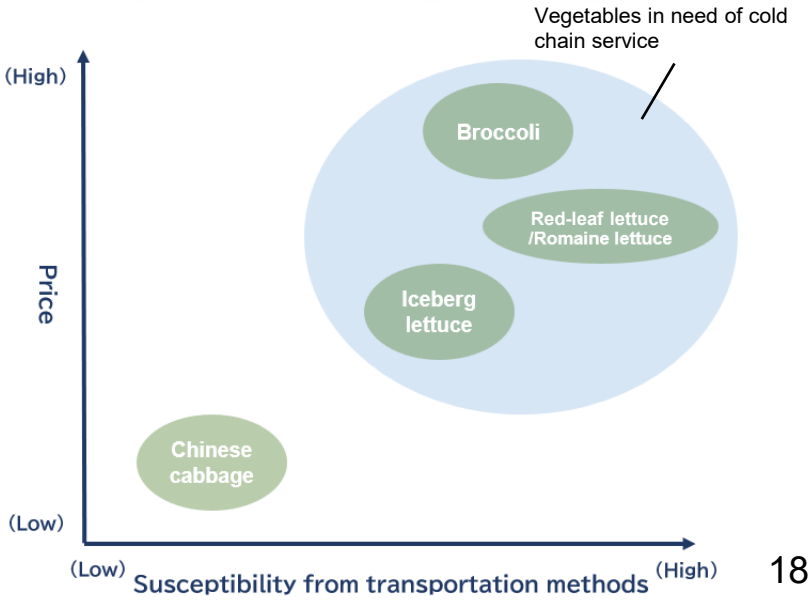
- Implementation period: January 31 to February 1, 2024
- Cargo:
  Chinese cabbage, iceberg lettuce, broccoli, sunny lettuce, & romaine lettuce
- Results:

① **10 to 30% difference in vegetable waste rate (product loss rate) between refrigerated and room temperature transport.**

② Lower waste rate **increases amount of product that may be sold and number of sales for the same harvest quantity.**

③ **Expectations for branding and sales channel expansion** in cooperation with manufacturers with freshness at the forefront.

Transport route (Buguias - La Trinidad - Manila)



Initiatives for Promoting Expansion of Cold Chain Logistics

(Changes in logistics services in ASEAN)

- **Growing demand for small-lot refrigerated delivery services** based on expanding e-commerce market
- Transition to **modern distribution systems** such as supermarkets

(Initiatives for expanding cold chain logistics services)

Japan proposed **standards for cold chain logistics services** to the **International Organization for Standardization (ISO)** to promote a healthy market and visualize quality.

Significance of Standardizing Cold Chain Logistics Services

Cold chain logistics challenges facing Asian countries

- Exposure to sunlight for long hours

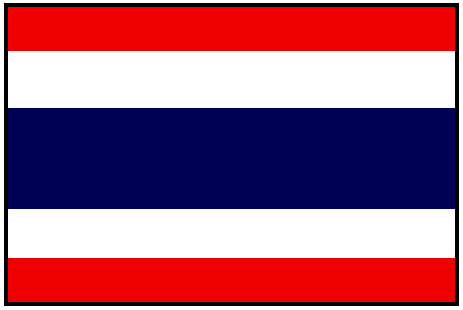
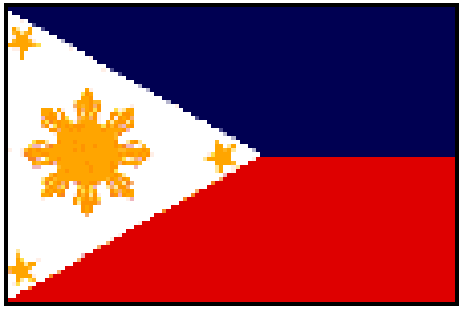
- Excessive use of cooler boxes

Standardization of Japanese-style cold chain logistics services

Transferring the standard to other countries

Expansion of Cold Chain Logistics Service Standards in ASEAN countries

- **National standards** based on ISO23412, **the international standard for B-to-C cold chain logistics services, are being successively formulated** in ASEAN countries.

Thailand	Philippines	Indonesia
		
NAC 23412-2564 (2021)	PNS ISO 23412:2021	SNI ISO 23412:2020
June 2021	January 2022	June 2022

- In the future, work will move forward to establish national standards for ISO 31512, the international standard for B-to-B cold chain logistics services.

Significance of Securing Sea Lanes and Resilient Supply Chains

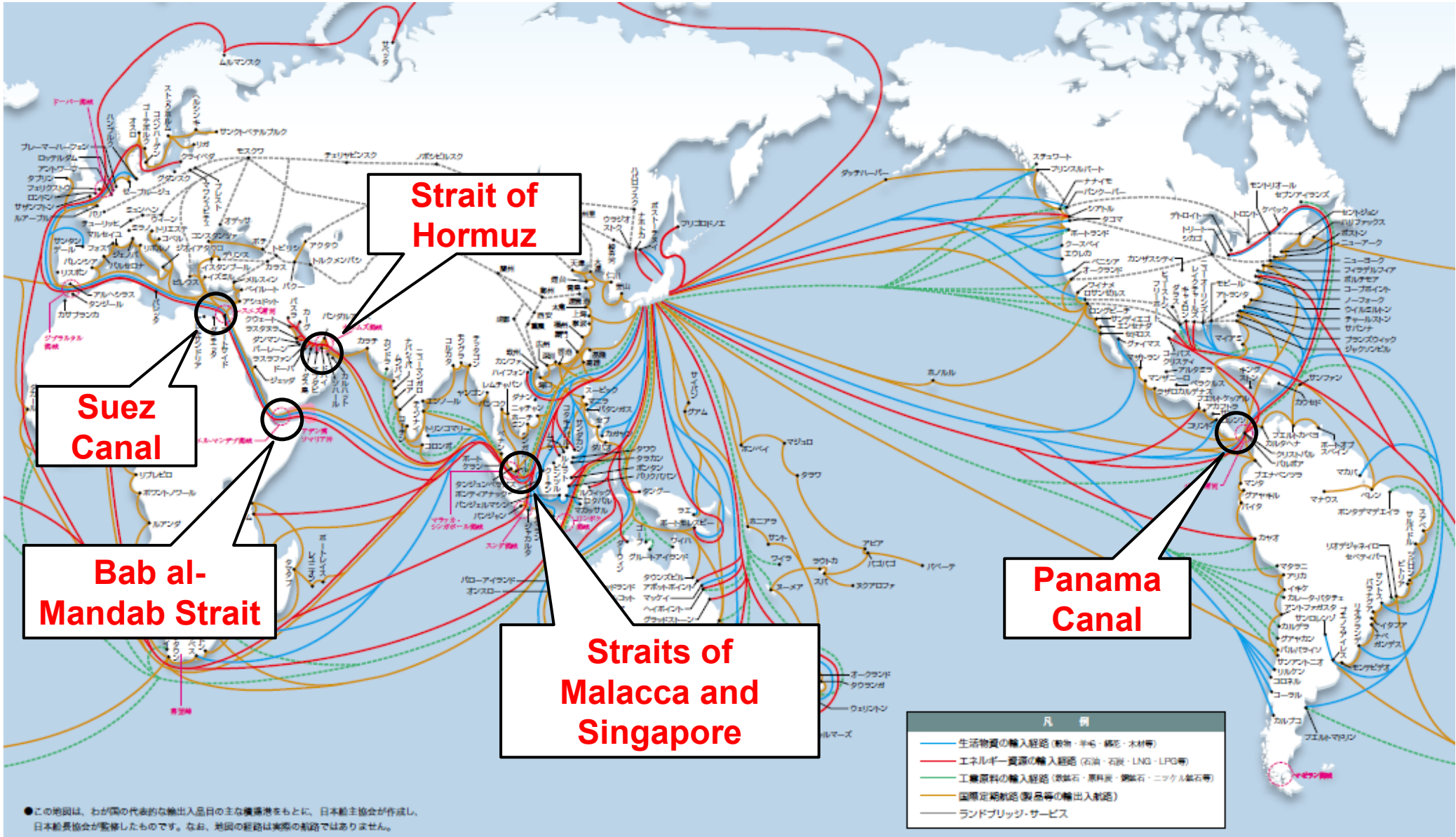
(Ensuring the sea lane security)

- **Strengthening the international order of seas** and **ensuring freedom and safety of navigation** are of paramount importance

(Strengthening supply chains)

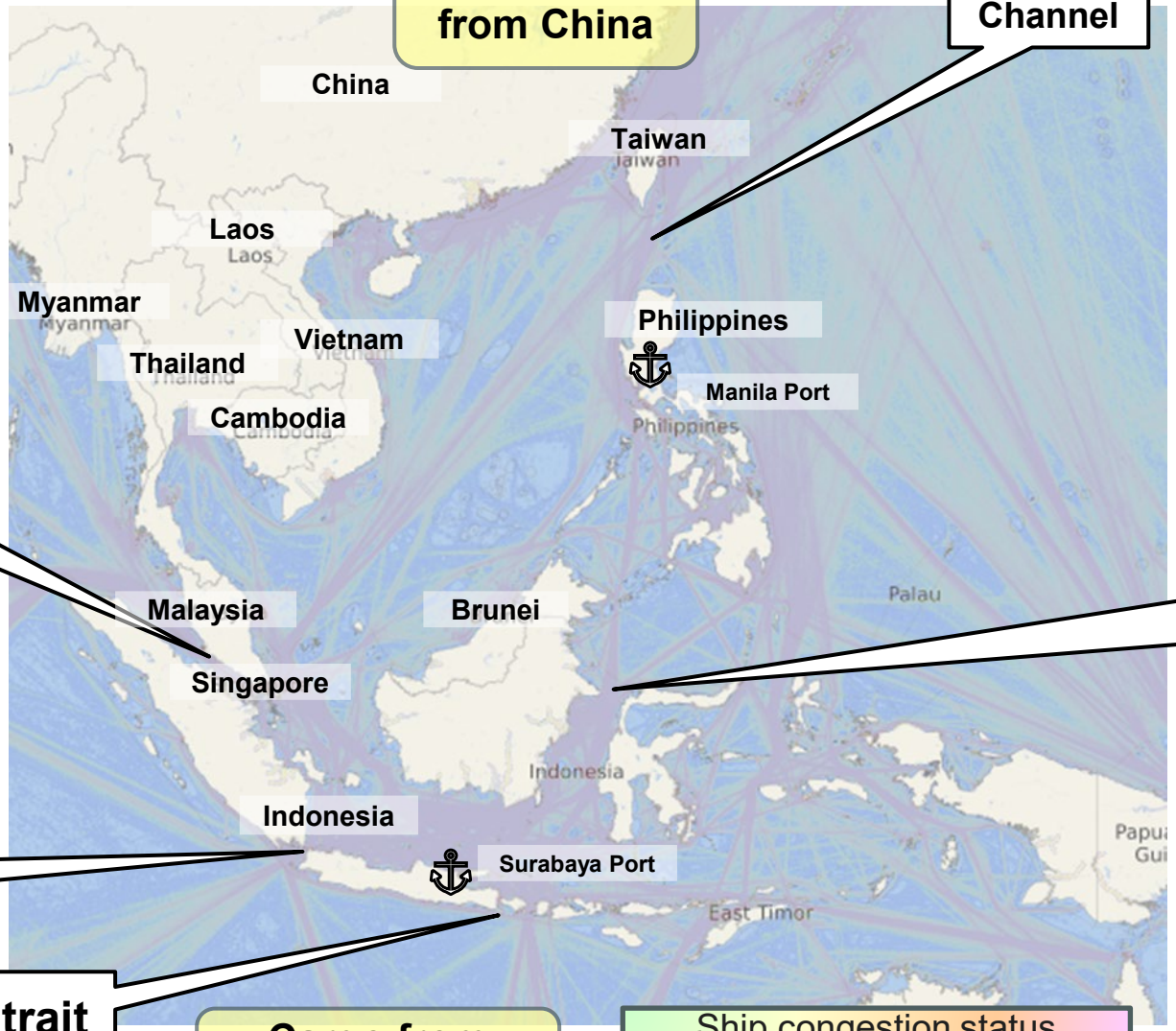
- As **supply chain risks diversify, they need to be built** not only to be **efficient** but also **sustainable** to adapt quickly and flexibly to changing conditions.

Main Maritime Routes and Major Choke Points



Source: SHIPPING NOW 2024-2025

Major Choke Points in the Philippines



Cargo to & from China

Bashi Channel

Cargo to US

Cargo to & from Japan

Straits of Malacca and Singapore

Makassar Strait

Sumda Strait

Lombok Strait

Cargo from Indonesia

Source: Vessel finder

Ensuring Supply Chain and Sea Lane Resilience

Normal Preparations	● Fostering a common international awareness that **resilient supply chains are in the global interest**
	● Keep a close eye on **infrastructure conditions** that may pose geopolitical risks
	● **Strengthen the entire international logistics network** to ensure alternative routes are secured within economic mechanisms
	● **Enhance efficiency** through **decentralization** and congestion avoidance
Emergency Response	● **Ensure sea lane safety**
	● Secure the **minimum transportation resources necessary**

● **A certain amount of leeway in supply and use of infrastructure, such as vessels and ports, is necessary**. Even during peacetime, it is important to consider market conditions, and **ensure resources are stable, shared and coordinated among maritime authorities and relevant companies**.

Ensuring Safety of Sea Lanes (Straits of Malacca and Singapore)

- **Japan is a major user of these straits**. The Malacca Straits Council, established in 1969, **supports and cooperates with coastal countries (Malaysia, Singapore, and Indonesia) through projects to develop and maintain navigational aids, provide technical cooperation, and conduct hydrographic surveys.**
- In response to the increase in countries using the straits, the **"Cooperation Mechanism" was established** in 2007 **to enhance cooperation between coastal states and strait-using countries** in these international straits.

Development and maintenance of navigational aids

Capacity building for coastal countries

Japan Coast Guard Cooperation with Coastal Countries Along Sea Lanes

- In recent years, several Asian countries have established **coast guard agencies**.
- In response to increasing requests for technical training and other support, the **Mobile Cooperation Teams (MCT)** was established in October 2017, which is **dedicated to supporting foreign coast guard agencies build up their capabilities**.
- The MCT has been dispatched to countries along sea lanes to promote **continuous capacity building**

[Technical support]
Maritime law enforcement, maritime safety and security, search and rescue, vessel maintenance and management, oil spil response.

Training lifting and lowering boat on boat PCG patrol vessels (Philippines)

Lecture of Maritime Law Enforcement (Indonesia)

Long-range acoustic discharge device (LRAD) training (Malaysia)

Arresting technique training (Djibouti)

What We Would Like to Share with You Today

- **Enhancing international maritime transport efficiency**
  - Importance of digital transformation for cargo handling and customs clearance
  - Increased vigilance against cyber risks
  - Reduction of environmental impact through Green Logistics (GX)

- **Cold chain logistics**
  - Income improvement for agricultural workers
  - Advancement and modernization of domestic industries
  - Stable supply of inexpensive food

- **Ensuring stable supply chains**
  - Strengthening the international order of seas to ensuring freedom and safety of navigation

- **What Japan can contribute**
  - Technical cooperation, international standardization, and support for upgrading maritime security capabilities

Thank you for your kind attention!

TERADA Yoshimichi