Chapter 1

Introduction

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Chapter 1

Introduction

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1.1. Background

The cold chain, or low-temperature storage and transportation system, is indispensable for countries in Southeast Asia (SEA) as they mostly have a tropical climate. There is an even more pressing need for the cold chain due to the expansion of demand for perishable products, such as processed, livestock, and aquatic products, due to population increases and economic growth in the region.

The cold chain is a key factor in modernising the distribution system of agri-food products and developing the food value chain (FVC). Some case studies on dairy and fishery products in SEA suggest that the cold chain is necessary for increasing the value of products and also extending distribution channels.[2] Nevertheless, the cold chain has been less emphasised in the context of FVC studies, which tend to focus on the cost–benefit structure of actors in the chain and the industrial structure in line with arguments in the literature on value chain development (VCD) and global value chains (GVCs).[3] We need to cast light on the actual state of the cold chain and complement the arguments to improve the FVC.

The importance of logistics is mentioned as one of the central issues in the Association of Southeast Asian Nations (ASEAN) region by the Master Plan on ASEAN Connectivity (MPAC) 2025, a strategic document for guiding actions to improve connectivity in the region towards 2025.[4] One of the strategic areas discussed in the MPAC 2025 is 'seamless logistics', which is expected

[1] Economic Research Institute for ASEAN and East Asia (ERIA)/Japan International Research Center for Agricultural Sciences (JIRCAS).
[2] See Kusano (2019).
[3] See Stamm and Von Drachenfels (2011), Nang'ole et al. (2011), and Donovan et al. (2013) for value chain development (VCD), and Gereffi et al. (2005) and Gereffi and Fernandez-Stark (2016) for GVCs. Standards are another well-argued issue in global value chain and VCD studies focusing on agri-food industries (Humphrey and Memedovic 2006).
[4] The MPAC 2025 was adopted at the 28th ASEAN Summit in September 2016 as the successor of the MPAC adopted at the 17th ASEAN Summit in October 2010.

to be achieved by reducing the costs of the supply chain in each ASEAN member state.[5] However, there is a lack of detailed information on the key logistic networks in ASEAN for identifying specific bottlenecks and prioritising actions.[6] The MPAC 2025 shows a plan to implement an analysis of the time and costs of priority trade routes led by the Senior Economic Officials Meeting with the Senior Officials Meeting for ASEAN Ministers on Agriculture and Forestry and other implementing bodies/stakeholders as the first step to establishing the database of the land transport network in ASEAN.[7]

1.2. Aims and scope

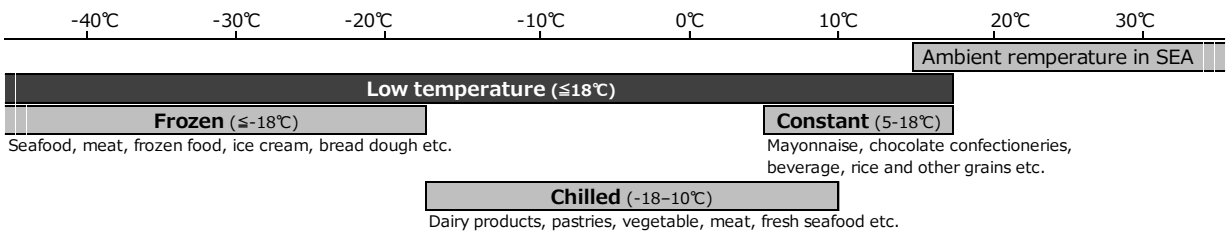
This report aims to contribute to spreading the cold chain with modern systems by revealing the actual condition of the cold chain in selected ASEAN countries. Information on the cold chain would be beneficial to detect intervention points to improve connectivity in the region and with each country by supplementing initiatives regarding logistics, such as the MPAC 2025, from a different angle.

We focus on three aspects to describe the actual condition of the cold chain in each country based on raw data obtained from interviews to stakeholders of the chain and secondary data. (i) The first is the demand for the cold chain, which is expressed by the volumes or values of products requiring temperature control. (ii) The activities of the main players in the cold chain, such as representative firms of storage services and transportation in selected cities, are also examined. (iii) We also look at government policies, such as rules about the storage and transportation of products requiring temperature control, and policies to support the development of the cold chain.

The cold chain is stipulated by the temperature zone in which products are processed, stored, and distributed. Although actual temperatures corresponding to each zone differ by company, Figure 1.1 shows a typical example. Many studies in this report suppose a chain at low temperatures, but some arguments put emphasis on chilled or frozen conditions.

[5] The MPAC 2025 indicates five strategic areas: sustainable infrastructure, digital innovation, seamless logistics, regulatory excellence, and people mobility.
[6] See MPAC 2025, p.56.
[7] The construction of the database has been called for by the ASEAN Economic Community Blueprint 2025 and the ASEAN Strategic Transport Plan 2016–2025.

Figure 1.1: A Typical Example of the Temperature Zone of the Cold Chain



SEA = Southeast Asia.

Source: ASEAN-Japan Transport Partnership (2018).

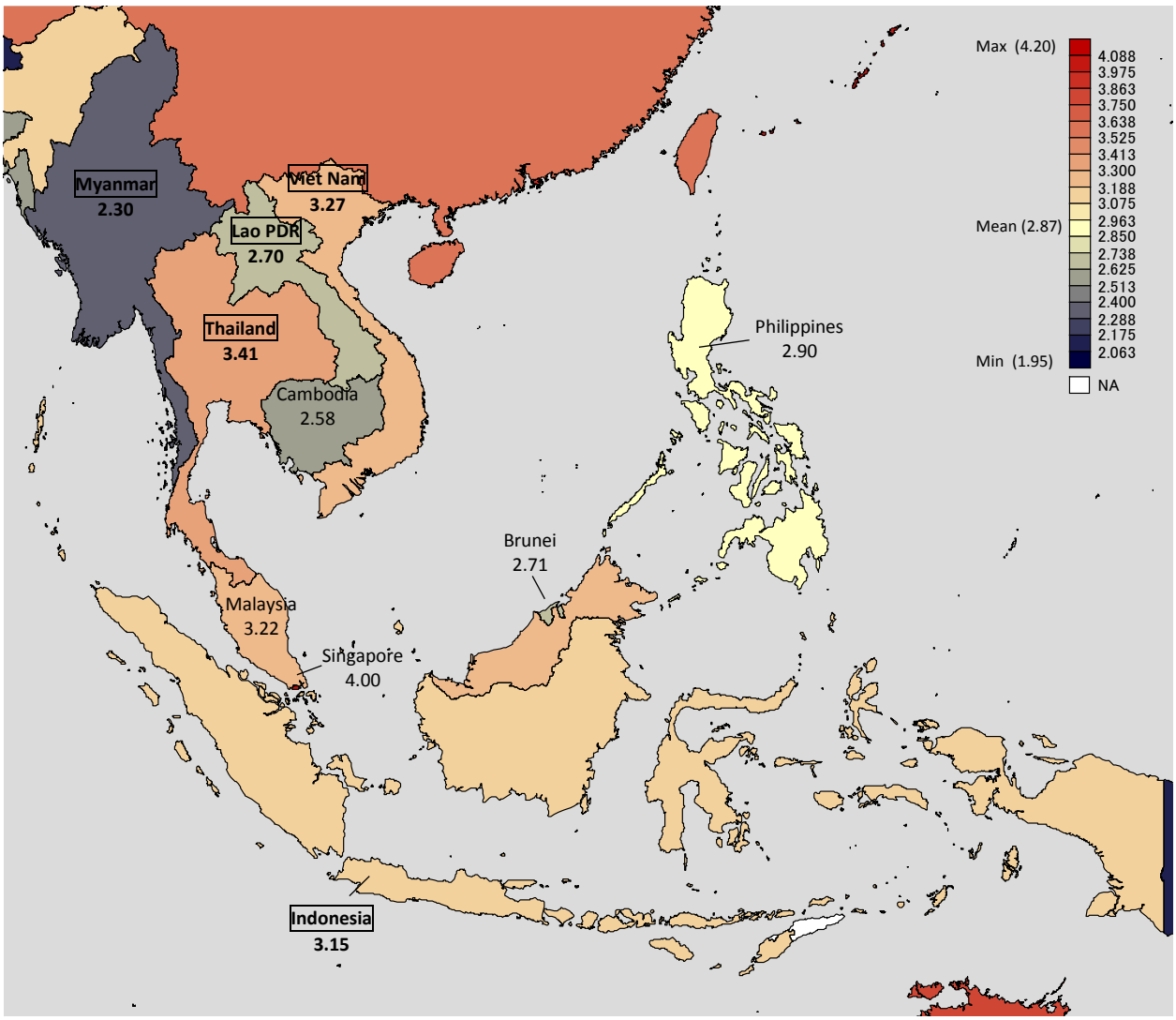
1.3. Study sites

The target countries in this report are Thailand, Viet Nam, Indonesia, Lao PDR, and Myanmar. Their level of development in logistics is different, according to the Logistics Performance Index (LPI), a benchmark of performance on trade logistics provided by the World Bank.[8] Figure 1.2 shows that trade logistics are evaluated at a similar level in Thailand and Viet Nam, followed by Indonesia. The LPI scores of the Lao PDR and Myanmar drop a certain degree from the aforementioned three countries and are scored lower than the world average.

The variety of the LPI implies that the obstacles to developing the cold chain are not the same in each country. Even while maintaining the three aspects of (i) demand for the cold chain, (ii) the activities of the main players, and (iii) government policies, the country-specific analyses on the cold chain in each chapter stress different issues based on different circumstances.

[8] Although the LPI does not reflect information about low-temperature storage and distribution, it is useful to grasp the general status of the logistics in each country compared to other countries.

Figure 1.2: Target Countries and Logistics Performance Index (LPI) Scores in 2018



Notes: The values denote the international LPI scores. Max, mean, and min denote those of the world. The names within boxes are the target countries in this report.

Source: World Bank. https://lpi.worldbank.org

Thailand

In Thailand, an increase in the number of supermarkets and restaurants has triggered the demand for cold storage and transport systems to keep the products fresh and maintain their quality. Modern cold chain systems have been rising in popularity and are utilised by various companies to meet the demand for different products.

Chapter 2 explores the issues of the cold chain, especially in the context of the improvement in the system through policy interventions based on statistical data and interviews as well as arguments in past studies, such by as the World Bank and APEC. It clarifies the comprehensive nature of the challenges to developing the cold chain, which are not limited to issues on infrastructure.

Viet Nam

Viet Nam's cold chain, particularly the storage market, is much larger in the south surrounding Ho Chi Minh City than the north near Ha Noi, given the concentration of the supply of agricultural and seafood supply. Conversely, this suggests large room for investment and development in the north.

Chapter 3 pays attention to the activities of representative players in the cold chain in both southern and northern areas with a list of major companies and their capacities. The list includes 27 cold storage companies, 13 pangasius or shrimp processing companies that operate their own cold storages, and 10 cold transportation companies by location and difference in domestic or foreign capital.

Indonesia

Indonesia is different from the other four countries in this report in terms of its geographical and demographical characteristics. It is an archipelagic country located out of the Greater Mekong Subregion (GMS) and has a vast population that far exceeds other ASEAN countries.

Chapter 4 summarises information on the various types of cold chain players with a list of 69 cold storage companies, 59 frozen fish and shrimp processing companies, and 55 sausage or nugget processing companies across the country. In particular, the activities of the companies in the metropolitan area around Jakarta, called Jabodetabek, are emphasised.

Lao PDR

The Lao PDR is characterised by a small domestic market with 7 million people in total and a strategic location surrounded by five ASEAN member states (AMS) and China. While the traditional cold chain, using plastic containers, ice, and pickup trucks, dominates domestic transportation, the modern logistics system is mainly used for the international trade of agri-food products.

Chapter 5 focuses on inter-state and transit trade with the highest level of the cold chain to respond to the large demand for agri-food products from neighbouring countries through the Lao PDR. It also discusses the factors determining trade, such as the locations of customs and trade routes, as trade values and quantities.

Myanmar

Myanmar is located at the western end of the GMS and neighbours China and India. Furthermore, it has the fifth-largest population among AMS and a growing economy to drive a steady increase in both the production and consumption of agri-food products. The use of the cold chain for agri-food products is still in its early stage but is expected to grow significantly in the future.

Chapter 6 describes the whole cold-chain landscape of Myanmar, including both the traditional and modern chains for fishery, livestock, and agricultural products in detail. The study explores sites mainly along the Ayeyarwady–Yangon and Yangon–Mandalay/Pyin Oo Lwin–Muse routes. The potential to expand the modern chain is estimated based on both trade statistics and case studies.

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