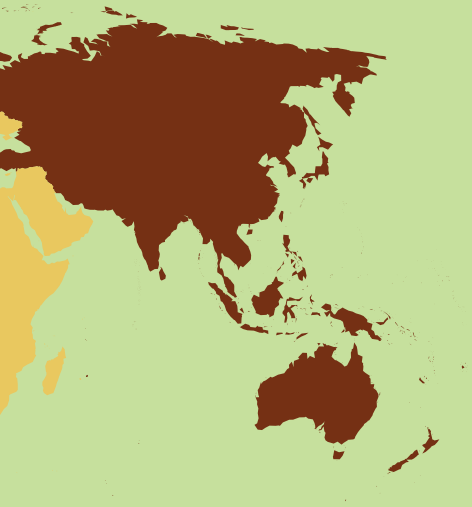

GUIDE TO KEY ISSUES IN DEVELOPMENT OF LOGISTICS POLICY

UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

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LIST OF ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CFS	Container freight station
CIF	Cost, insurance and freight
CO_2	Carbon dioxide
ESCAP	Economic and Social Commission for Asia and the Pacific
FIATA	International Federation of Freight Forwarders Associations
FOB	Free on board
GDP	Gross domestic product
ICT	Information and communication technology
KRW	Korean Won, currency of the Republic of Korea
LPI	Logistics Performance Index
MLTM	Ministry of Land, Transport and Maritime Affairs, Republic of Korea
MTO	Multimodal transport operator
NESDB	National Economic and Social Development Board, Thailand
NVOCC	Non-vessel operating common carrier
OECD	Organisation for Economic Co-operation and Development
RFID	Radio-frequency identification
SDR	Special drawing rights
SME	Small and medium sized enterprise
UNCTAD	United Nations Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe
3PL	Third-party logistics
4PL	Fourth-party logistics

I. INTRODUCTION

The publication of guidelines on minimum standards and codes of professional conduct for freight forwarders, multimodal transport operators and logistics service providers was mandated by member States, as indicated in the Regional Action Programme for Transport Development in Asia and the Pacific, Phase I (2007-2011). Following the mandate, the *Guidelines for Minimum Standards and Codes of Professional Conduct for Freight Forwarders, Non-Vessel Operating Common Carriers and Multimodal Transport Operators* were published in 2011.

During the development of the Guidelines, it became apparent that further study and consultation would be beneficial to fully consider the particular issues brought by the ever-increasing complexity of services provided by logistics service providers. The development of guidelines for logistics service providers was therefore included in the Regional Action Programme for Transport Development in Asia and the Pacific, Phase II (2012-2016). This study on logistics service providers was initiated to offer governments and industry a review of the emerging characteristics and particular challenges of the industry to support policy development.

During the course of the study, the secretariat carried out desk research on the nature of services provided by logistics service providers, relevant regulations, and initiatives for improving professional standards by both government and industry. The secretariat also visited the Republic of Korea, Singapore and Thailand to carry out consultations with control authorities, national associations, logistics companies and research institutes. A preliminary draft on study findings was discussed at a workshop in Negombo, Sri Lanka, 7 June 2013, held in conjunction with the annual Regional Forum and Meeting of Chief Executives of National Associations of Freight Forwarders, Multimodal Transport Operators and Logistics Service Providers. The study was then further refined based on the discussion during the workshop.

This Guide provides a framework for developing, reviewing and enhancing policy to support the logistics industry in the provision of more comprehensive services in the Asia and Pacific region. Chapter II presents the mapping of logistics services to provide the analytical framework of the Guide and to highlight the changing role of logistics service providers. Chapter III discusses the key issues relating to policy development on logistics service provision. Chapter IV and V discuss the development of a comprehensive policy framework to support industry development. Chapter IV presents the concept of a national logistics plan, and provides examples from the region. Chapter V focuses on the establishment of national logistics coordination mechanisms to implement the national strategy. To conclude, Chapter VI highlights the role of national logistics associations in the new operating environment.

II. MAPPING OF LOGISTICS SERVICES

A. Scope of Logistics Service Provision

There is no universally agreed definition for logistics services, and the role may be interpreted in very different ways across the region. At the same time, globalization and increased use of technology are changing customer expectations and the way services are delivered. These factors have consequences for the development of logistics policy, as the traditional ways of doing business in logistics, and therefore the way the industry is regulated and promoted, may no longer be appropriate.

An analytical mapping is used to better understand the scope of work for logistics services, particularly in comparison to the services traditionally associated with the role of carrier, warehouse provider, terminal operator, freight forwarder, non-vessel operating common carrier (NVOCC), and multimodal transport operator (MTO). By identifying the services related to each role, it is possible to explore the nature and implications of non-traditional logistics services. In particular, a mapping exercise helps to identify the responsibilities involved, and the associated risks and liabilities the operator decides to take on when extending his operations. Additionally, mapping may suggest new stakeholders and aspects of logistics policy which need to be taken into account.

Annex I summarizes the results of the desk research on logistics definitions, based on various national and international publications, including various national laws and regulations and reports by the United Nations Conference on Trade and Development (UNCTAD), the United Nations Economic Commission for Europe (UNECE), the European Commission, the International Federation of Freight Forwarders Associations (FIATA), the World Bank, the Organisation for Economic Co-operation and Development (OECD).

Table 1 presents an example of how a range of services can be identified for each definition relating to logistics services, describing the different functions carried out

under the umbrella of logistics service provision. In some cases, different terms are used for the same function or service. Therefore to facilitate the aggregation and analysis of the definitions, one or more service IDs (simplified service terms) can be assigned to each description. For example, "transportation with a selection of carriers" can involve carriage, selection of carriers and negotiation of tariffs, depending on the context.[1] Patterns can be identified and analyzed when a similar analysis is carried out with a range of sources.

The compiled list of services may be then compared to the perceptions of the roles of various types of logistics service providers: carrier, warehouse provider, terminal operator, freight forwarder, NVOCC, MTO and logistics service provider, as shown in Table 2, which presents the result of discussions with various stakeholders during the course of this study. During the consultations with national associations and other industry representatives, it was clear that the range of services considered to be carried out by logistics service providers is more extensive than that of transport operators with more limited roles, e.g. carrier and freight forwarder. At the same time, it was highlighted that logistics service providers generally evolve from traditional roles in logistics to new additional roles in response to new demands by their clients. Services can be offered either through out-sourcing or by developing in-house capabilities.

The detailed list of services provided by logistics service providers (beyond services by carrier, warehouse provider, terminal operator, freight forwarders, NVOCC and MTO) presented in Table 2 can be grouped as follows:

- *Assembly*: There is a wide range of assembly activities that can be carried out in the context of logistics services, covering both low-end assembly (such as kitting) and high-end assembly (e.g. assembly of final product based on store requirements). These activities can take place at client premises or the warehouses of logistics service providers. Kitting services

[1] The descriptions included in each service ID are provided as Annex II.

could also be included in the role of freight forwarder as they may involve basic labeling and repackaging services.

- *Supply chain:* Logistics service providers increasingly offer services from the perspective of supply chain rather than transport. This can include logistics consulting and supply chain design, management of supply chain, operation of supply chain, operating as lead logistics provider, procurement responsibilities or inventory management.
- *Quality control*: Logistics service providers may provide technical testing, localization and quality inspection services, either as in-plant services or at the warehouse.
- *Financial services*: Some providers may choose to provide collateral management services, and act as insurance brokers for their clients upon request.
- *Customer services*: Logistics service providers may assume responsibility of such back-end customer service activities as returns and repairs, operate the call centre (particularly relating to warranty and technical support), and provide reverse logistics services.

Table 1. Services covered by different definitions of logistics (example)

Document	Organization	Scope of sector	Described services	Service ID 1	Service ID 2	Service ID 3
Managing the request-offer negotiations under the GATS: Logistics services	UNCTAD	"Logistics can be defined as the management of global supply chains. The services provided by logistics companies include: management of customs procedures, setting up of assembly and manufacturing plants; groupage; warehousing; information logistics services; and transportation with a selection of carriers and negotiation of tariffs. Some value-added services include management of warranty support programmes, return and repair as well as global logistics services."	Management of customs procedures	Customs and other formalities	x	x
			Setting up of assembly and manufacturing plants	Assembly	x	x
			Groupage	Consolidation	Handling	x
			Warehousing	Warehouse	x	x
			Information logistics services	Information services	x	x
			Transportation with a selection of carriers	Carriage	Selection of carriers	Negotiation of tariffs
			Management of warranty support programmes	Customer service	Value added service	x
			Return and repair	Customer service	Repair	Value added service
			International services	Value added services	x	x
		"3PL firms specialize in integrated logistics services. They address the logistics needs of their clients by integrating transportation, warehousing, inventory control, order processing, customs brokerage and other logistics activities in a comprehensive and seamless supply chain management system. Firms in the 3PL sub-sector provide a designed set of customized logistics services, tailored to the exact needs and specifications of their clients."	Transportation	Carriage	x	x
			Warehousing	Warehouse	x	x
			Inventory control	Inventory	x	x
			Order processing	Order processing	x	x
			Customs brokerage	Customs and other formalities	x	X
			Customized logistics services	Customized logistics services	x	x
			Integration of services	Integration of suppliers	x	x
		"Fourth-party logistics (4PL) goes one step further than 3PL and involves the integration of all companies involved in the supply chain. This guarantees that planning, steering and controlling of all logistics procedures will be done by a single service provider with a long-term strategic objective."	Integration of all companies involved in the supply chain	Integration of suppliers	x	x
			Planning all logistics procedures	Design of supply chain	x	x
			Steering and controlling of all logistics procedures	Management of supply chain	x	x

Table 2. Mapping of logistics services

Services	Carrier	Warehouse provider	Terminal operator	Freight forwarders	NVOCC	MTO	Logistics service providers
Carriage	x					(x)	x
Information services, including track and trace	x			x	x	x	x
Arrangement of transport operations	(x)			x	x	x	x
Warehousing (CFS)		x	x	(x)	(x)	(x)	x
Consolidation		x	x	x	x	x	x
Customs formalities and other order administration			x	x	x	x	x
Selection and integration of multiple carriers				x	x	x	x
Kitting		x		x			x
Assembly and processing of goods							x
Technical testing							x
Localization							x
Quality inspection							x
Lead logistics provision							x
Logistics consulting and supply chain design							x
Management of supply chain (including transport, warehousing and inventory)							x
Operation of supply chain							x
Project logistics							x
Procurement							x
Financial services, such as collateral management or insurance brokering							x
After market services, e.g. reverse logistics, returns and repairs							x
Outsourced call centre (e.g. technical and warranty enquiries)							x

* Some companies may choose to outsource some services they offer. In the context of this table, outsourced services are also considered to be included in the role in question.

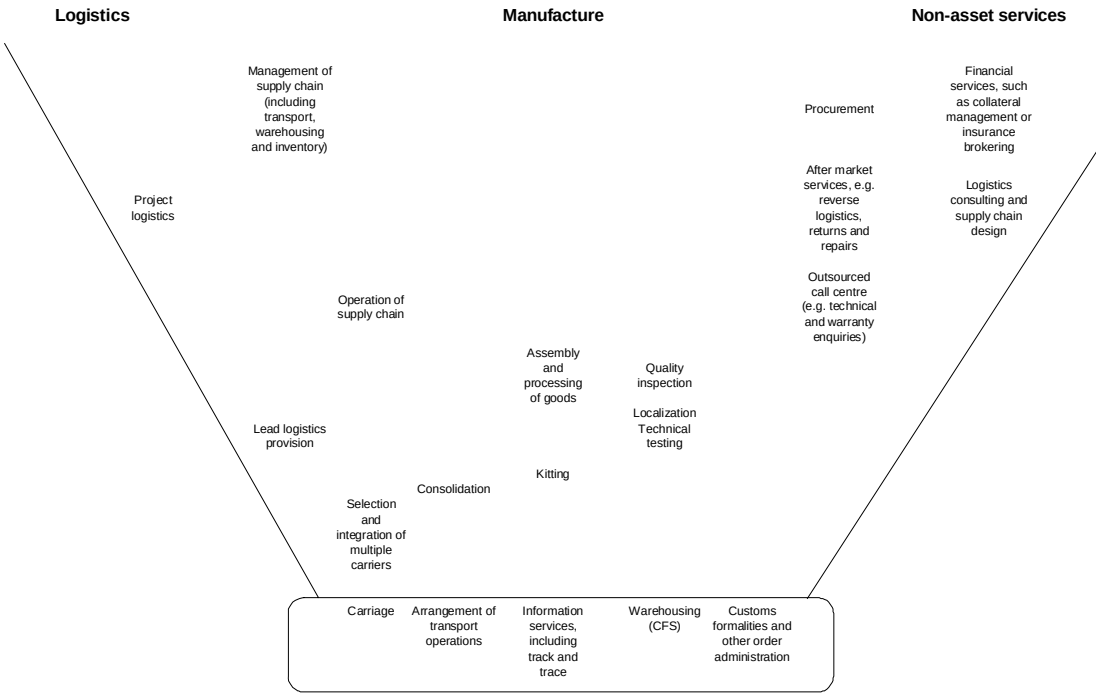
**(x) indicates that the service is considered to be sometimes relevant to the role in question.

B. Emerging Features

From the list of services presented in Section A, it is clear that logistics services are evolving in several aspects. On the one hand, traditional services are enhanced with more complex offerings. A company may, for example, move from the provision of carriage to the integration of several carriers by employing subcontractors to cover a part of its operations for a particular order. With adequate size, the company can boost its offering by acting as the lead logistics provider, taking control over all other operators in the transport chain. From this, it may be natural to consider services related to the management of the supply chain. On the other hand, the range of services offered is becoming wider. A complementary activity to the example given may be the consolidation of goods at the company's warehouse, with added kitting or processing services. Therefore in most cases both dimensions are relevant, as the new services can then be offered at various levels of complexity.

To illustrate this, Figure 1 presents the listed services on a spectrum of complexity and focus. Three general directions were identified: logistics (referring to more developed transport, warehousing and supply chain services), manufacturing (capturing services relating to further processing of goods), and non-asset services (involving a range of services relating to management and operations). Most services fall in-between the categories, which is why the figure should be interpreted as a spectrum rather than a categorization. The traditional services form the basis of the offering, with value added services developing to complement them.

Figure 1. Logistics services by complexity and focus



Some observations can be made on the new service offerings.

- **The possible service offerings are very diverse.** While the services provided by an individual company are logical continuations to its core business and particular strengths, the overall services are scattered across a wide plane of possible functions.
- **Non-transport services increasing in importance.** An increasing proportion of activities by logistics service providers are services that do not strictly fall into the category of transport.

The two factors above mean that it has become more difficult to categorize and define logistics service providers. For authorities and associations, this may make it more difficult to track the development of the industry, as information gathering can be more complicated. For example, it may not be clear exactly how many logistics service providers are currently operating overall, and what the level of their participation and

interaction with government programmes and entities is. The wide range of possible services exposes the logistics industry to regulations and policies scattered across many agencies and legislations, with limited coordination. It may also limit the potential for logistics service providers to identify common aims and needs.

The change in the nature of service offerings also poses new requirements in terms of the skills of the operators, as well as a more comprehensive view of the supply chain. For this reason, companies may look for employees with a process, rather than transport, orientation. This includes skills such as project management, business analysis, marketing skills, legal knowledge, and risk management. These are skills that are valuable across a variety of industries, and logistics service providers may need to enhance the industry image to be able to obtain the most qualified candidates.

- **In addition, services are highly customized.** The services provided are tailored to fit the individual customer, both in terms of the service package and the way in which particular services are provided.

This can have several implications. Firstly, it may influence the extent to which standards can be set in the industry. It may no longer be possible to find standardized enough service conditions which can be agreed on by the industry and their clients. Secondly, the ability to respond to the requirements of the client is crucial for competitiveness, making it difficult for companies to compete on price alone. Thirdly, as the services delivered may be ad hoc and one-time services, it is crucial that the client believes that the operator is capable of expanding the services to a new field and therefore the relationship between the customer and the operator becomes important. Together these factors can influence the contract negotiation process, compared to a situation where operators offer a standardized service and compete on price.

The expansion of services may also be driven by government policy. In the Republic of Korea, the Framework Act on Logistics Policies sets out a policy on integrated logistics providers, which provides benefits to companies providing integrated

services of transport, warehousing, and value-added services. As a result, the number of integrated logistics companies has increased through commercial agreements between companies, each specialized in one of the areas. Another example of policy driven development can be found in Singapore, where a major logistics service provider was initially established as the result of the cooperation of government agencies. The modernization of the logistics industry by building up the fragmented container, transport and warehousing companies was seen as necessary to support the accelerating industrialization of the country.

III. KEY ISSUES

Given the characteristics presented in Chapter II, logistics service providers and relevant authorities are subject to new challenges. This Chapter outlines some of the key issues to be considered in the development of logistics policy in the new operating environment.

A. Complexity of Regulation

1. Regulation of entry

Regulation of entry to the industry can be carried out by the government or the industry, or in some cases both. While the government has the authority to legally regulate the operations of companies, the national association can exercise control over the market through the reputational impact of association membership.

Generally speaking, control by the government can take two forms: registration/filing or licensing. Filing of application can take place either upon entry only or at regular intervals. In the case of registration, the applicant provides business details to the relevant government authority, who confirms the details provided before granting registration and the permission to operate in the market. In the case of licensing, the applicant is tested for suitability before granting the license and allowing access to the market.

This type of regulation of the industry by the government can serve multiple purposes. Firstly, provision of company details can act as a confirmation of the legal intention of the entrepreneurs, and their financial and professional standing for the chosen sector. As an indication of this, the applicants often have to fulfill minimum conditions for capital and other factors. Secondly, the issuance of licenses can be used to control the market. This is, for example, the case in the Republic of Korea, where the number of licenses for trucking has been limited since 2004. Lastly, a registration requirement may

allow the government to collect information on the companies operating. This information can be used for policy planning and verification purposes.

Modern logistics service providers, as described in Chapter II, are rarely found as its own category in government regulation. Therefore, rather than facing differentiated regulatory requirements for entry, the companies are subjected to multiple entry requirements, depending on the type of services they plan to offer. The Asia-Pacific Economic Cooperation (APEC) publishes a directory listing of logistics regulators for its member economies. In the directory, 15 categories affecting door-to-door delivery are listed, including both regulations applicable to all logistics companies and more specialized permits and licenses. In the case of Thailand, a total of 13 different agencies can be identified, for Singapore, the number of agencies is seven, and for the Republic of Korea three.[2] The role of the authority can vary from direct control to provision of information, but the figures suggest that the number of government agencies that the company needs to interact with may be considerable, particularly if special licenses are required. The operator has the responsibility for making sure that s/he is compliant with all relevant regulations, which can be time-consuming.

To further illustrate the role of authorities for the industry, examples of regulation of entry are given in Table 3.

[2] http://www.logistics.apec.org/

Table 3. Examples of other regulation of entry

Type of regulation	Description	Example
Regulation on setting up a company	In most countries, individuals looking to set up an enterprise need to register with the relevant authority by providing the appropriate company details, such as key employees and field of business, and in some cases to pay a registration fee.	In Singapore, all businesses must register with the Accounting and Corporate Regulatory Authority, for a fee of S$65-$615 depending on the business.
Regulations relevant to setting up a trucking company	In some cases, separate registration is required for individuals who wish to engage in transport activities, or in a particular type of transport activity.	In the Republic of Korea, a special permit is required for entering the trucking industry.
Regulations relevant to MTOs		In Thailand, based on the Multimodal Transport Act, companies looking to provide multimodal transport services need to register with the Marine Department, and are subject to a minimum capital requirement of SDR 80,000.
Registration as freight forwarder		In Sri Lanka, the Freight Forwarders and Non Vessel Operating Common Carriers (Licensing) Regulation states that companies intending to carry out freight forwarding or NVOCC activities need to register with the Director General of Merchant shipping. The minimum requirements for the registration vary depending on whether the company will be issuing documents of carriage, but include conditions on minimum capital, insurance and standard trading conditions.
Regulation controlling factory activities	The introduction of light manufacturing facilities may mean that the use of land classification of the company premises changes.	Based on the Factory Act, companies in Thailand operating machines of more than five horse powers are classified as factories, and need to register with the Department of Industrial Works. The Department will issue the company an annual license after inspection of premises and confirmation of appropriate use of land.
Warehouse regulations	It may be necessary to register as a warehouse provider, in particular when dealing with dangerous goods or when establishing a bonded warehouse.	In Singapore, all business premises need to be approved by the Urban Redevelopment Authority for the intended use. For logistics companies, the premises need to follow the 60:40 rule, meaning that at least 60% of the gross floor area is to be used for industrial or warehouse activities (e.g. storage of goods), with the remaining 40% being used for offices and other support functions. In Thailand, a company wishing to set up a bonded warehouse needs to apply for permission with the Customs Department, and are subject to a security bond, bank guarantee and other requirements, as well as a yearly license fee. The criteria vary by the type of bonded warehouse to be established.
Registration as customs broker	For companies providing customs related services, it may be necessary to register with the customs.	In Singapore, all entities engaged in import and export activities, or apply for related permits or certificates, need to be registered with Singapore Customs.

Source: Based on industry and authority interviews, and http://www.enterpriseone.gov.sg/, http://www.customs.go.th, and http://www.customs.gov.sg.

Similarly to the government, the industry (i.e. national assocations) may have an interest in setting minimum requirements for its members, e.g. through minimum capital requirements. The aim of the regulation is the same as for the government, i.e. to confirm that the company is of appropriate standing. However, in some cases the conditions set by the association may be higher than those set by the government.[3] This may be justified by the additional incentive of industry reputation. Controlling the quality of its members increases the credibility of the association, and hence has a shared benefit for the promotion of the industry. Reputation of the potential member may be confirmed by including requirements for references from current members, and an inspection at the premises of the applicant.

Different entry requirements are not generally imposed for logistics service providers relative to applicants with a more traditional service offering. In some cases, such as the Singapore Logistics Association, information on the type of services provided is collected upon application. However, this data is used for information purposes only, for example to facilitate the distribution of information to potential customers. Additional regulation is not considered necessary, as the role of a national association is to support the development of services of their members and not to impose unnecessary controls. It is seen that additional value-added operations will be introduced by the companies as they build their capacity, and the feasibility of their offering is tested through commercial operations. This is particularly the case for those companies which start as a carrier or freight forwarder, and expand to become a logistics service provider. Because of the great significance placed on reputation, it was found unlikely that a rogue operator could launch a logistics service company from scratch.

2. Regulation of operations

Similarly to regulation of entry, operations of the logistics service providers may be controlled on a continuous basis by multiple authorities. At a basic level, this may

[3] ESCAP (2011) *Guidelines for Minimum Standards and Codes of Professional Conduct for Freight Forwarders, Non-Vessel Operating Common Carriers and Multimodal Transport Operators.*

involve the annual (or otherwise) renewal of company registration or specific licenses. However, the company may also be required to report on specific aspects of its operations, depending on services provided, for example:

- **Vehicles:** The fleet of the logistics service provider is subject to all relevant technical regulations such as vehicle dimensions and weight. The vehicles need to be appropriately registered. In Thailand, commercial vehicles in use have to be registered with Department for Land Transport annually;
- **Facilities:** The facilities of the company, such as warehouses, need to be used for the purpose originally indicated to the authorities. Additionally, the facilities are subject to health and safety regulations, particularly for fire control;
- **Perishable goods:** The authority in charge of food hygiene may have regular inspections at the premises to confirm the safety of the goods to consumer;
- **Dangerous goods**: When dealing with dangerous goods, the company may require additional permits for their storage and transportation. For example, in Singapore a company wishing to deal with petrol products has to file for a license with the Singapore Civil Defence Force. A separate permission is required for transporting, storing and disposal of the goods. Additionally, the driver must be certified for transporting dangerous goods;[4]
- **Financial services**: Companies offering financial services such as insurance brokering or inventory financing may be subject to regulation by the financial services authority; and
- **Labour**: For some specific functions, such as customs brokering and transport of dangerous goods, the relevant personnel may need to be appropriately certified, and it is the company's responsibility to ensure compliance.

In addition to the compulsory regulation, many authorities in the region have introduced certification schemes which encourage companies to improve their operations. This certificate signals to the customer that the service provider has been vetted by the

[4] http://www.scdf.gov.sg/content/scdf_internet/en/building-professionals/fire-safety-licensing-and-enforcement/Petroleum-Storage-Tpt.html

government authorities and recognized as a company of good standing. By fulfilling the requirements set by the certification, the company can access benefits such as:

- Decreased inspection rate;
- Greater facilitation measures, such as expedited clearance or green lane treatment;
- Priority when entering public facilities;
- Dedicated officials working with the company; and
- Priority status for other government schemes such as financial support.

Schemes are generally run by a single authority, offering benefits to its clients which are relevant to the specific services of that authority. For example, the Customs Department of Thailand runs a Gold Card Scheme, which is aimed at exporters and importers of good track record and reliable background. Evaluation of companies is based on compliance records and financial statements. As benefits, Gold Card companies get access to "Green Lane" procedures, and faster processing of drawback claims and tax and duty compensation claims. At the same time, the Ministry of Commerce runs an Export Logistics Model Award, where companies are evaluated based on various aspects, such as their management systems, customer service and environmental measures. The awarded companies are promoted at Ministry events nationally and internationally as best practice in the industry.

3. Implications of regulation

There are several disadvantages to the complex regulatory environment in which logistics service providers generally operate. Dealing with a range of authorities requires resources from the company, both in terms of time and finance. In addition to the time required for the actual regulatory procedures, the company also has to research the requirements specific to its operations to ensure that all relevant permits have been applied for. This can be particularly challenging for small and medium-sized enterprises (SMEs) with limited financial and personnel resources. For authorities, the duplication of regulatory information creates inefficiencies and may contribute to longer processing

times. At the same time, the likelihood of human error and conflicting information held by authorities may be higher. In some countries, a single window system has been implemented to reduce the regulatory burden on companies and to overcome barriers to efficient service delivery by authorities.

While ensuring compliance may be time-consuming, some logistics service providers turn their knowledge and experience into a competitive advantage, for example by providing assistance to their clients to comply with relevant government regulations. In particular, providing advice on customs procedures is a growing field of service. Due to the increasing complexity of supply chains, the international expertise of logistics service providers relating to domestic and foreign authorities can be turned into a value-added service.

For the control authorities, regulation and monitoring of activities can also be used as a source of information. Singapore Customs is using registration data to identify problem areas and plan outreach activities, directed at either individual companies or the wider industry. This process of monitoring can therefore help the industry to improve its capabilities and address problem areas. In the future, the system may be developed to include tailorized information bulletins and other functions.

B. Liability Issues

Offering a wider range of services expands the responsibilities the company in question accepts. While the company remains subject to traditional risks, such as risk of damage in handling or the cost of wrong delivery, new services expand the range of risks the company is exposed to. This is particularly the case when the logistics service provider integrates into the customer supply chain and starts overseeing the operations in a more comprehensive way. The introduction of more and more customized services also involves the company in contracts which may be increasingly non-standardized, introducing a new complexity to risk analysis.

When carrying out a transport contract, the responsibility of getting the goods from places A to B can be easily defined. When more services are introduced, this increases the number of steps the company takes before final release of goods from its responsibility. One can, for example, compare the processes of transporting furniture from the warehouse to the store with a setting where a logistics service provider assembles the furniture at its warehouse based on store demand. Compared to simple transport, it now has to take on the risks associated with the supply of each furniture part and possible delays in assembly, which will impact the delivery of the final product to the store. Each added step increases the risk of delays in delivery or non-delivery, which can result in contractual penalties and additional costs for the logistics service provider. As the failure to reach any milepost will have a knock-off effect on the following steps, the issue of transit time becomes a greater risk factor.

Additionally, there is always a risk of damage of the goods. This risk is also present in transport operations, but is more limited in complexity and duration. Particularly in cases when the logistics service provider takes over some procurement functions, or offers collateral management, it accepts responsibility over the control of the goods for a longer time. Incidents can occur during this time which damage the goods. There may also be significant amounts of money tied to the goods before payment by client. In addition to a possibility of accident, the company faces increased risk of non-payment in case of client bankruptcy or financial difficulties.

When taking responsibility for an increasing number of steps in the supply chain, the logistics service provider generally also controls a larger number of subcontractors. As the lead service provider, the company accepts responsibility for not only its own performance, but also the performance of the companies it employs. Therefore its risk also increases, as non-delivery by any company in the supply chain will have an impact on overall delivery of the lead service provider.

When providing advisory services to the customer, or acting on its behalf, the logistics service provider becomes more involved with the business decisions made by its

clients. If the client accepts the advice given, there is a risk that the logistics service provider is seen as responsible for any unfavourable outcome. In most cases, however, it is accepted by clients that the responsibility for accepting the advice remains with the client.

Knowing its liabilities enhances a company's ability to manage risk, and avoid costly incidents. The incidents which cannot be eliminated can be insured against. Risk management is in fact also management of the insurance premium. Insurance is a cost to the company, which is partly built into the pricing of services provided. As insurance costs are to some extent passed on to the customer, risk management has direct implications on the price competitiveness of the services provided.

C. Difficulties in Unifying Standards

Unification of standards has benefits to the consumer in terms of providing a guarantee that the services provided can be expected to be of a certain standard. At the same time, it can provide support for the service provider by clearly indicating expectations and formalizing industry practices. The main method for setting industry standards is the use of standard trading conditions drawn together by the national industry association. Within a company, standard operating procedures can be used to formalize practices in service delivery.

1. Standard trading conditions

For an individual company the main means of managing risk is the contract, which provides the basis for the commercial arrangement. It is therefore important for the contract to be as comprehensive as possible to cover all potential situations of conflict and to clearly indicate the limits of responsibility for both parties. Many national associations have produced standard trading conditions which they recommend for use by their members.

The use of standard trading conditions reduces the cost of doing business by reducing time spent on negotiating contracts on standard services. As services become more customized, it becomes increasingly difficult to provide services within the context of standard trading conditions. The two parties therefore need to enter more extensive negotiations to determine their roles and responsibilities. At this stage, the market environment and customer relationship can significantly impact the outcome and relative bargaining positions of the two parties. In particular in countries where such services are less developed, and only a few large customers exist, it can become difficult for the service provider to reach a favourable agreement. This is also the case when entering a relatively new type of service where the company does not have a strong track record, or when negotiating with new clients.

To some extent, common terms and conditions can improve the bargaining position of the company. While they are unlikely to be accepted by the client in their totality, they offer a starting point, which clarifies the industry position and offers advice on best practice. The challenge of drawing such standard conditions is the range of services provided by logistics service providers. To be useful, the clauses need to give clear enough provisions, but at the same time maintain flexibility to take into account the differences between individual contracts. Some associations, such as the Singapore Logistics Association, choose to construct the standard trading conditions in a way that separates the different roles, so that the applicable sections can be identified easily. In addition to the general conditions, the standard trading conditions also specify different conditions for cases where the company acts as an agent and where the company acts as a principal. While there is still potential for many differing service offerings, the distinction already provides some guidance.

A particular challenge is setting the limits of liability and insurance responsibilities. Traditionally liability has been expressed as a value per weight unit. This is no longer practical as services become more complex. Also as the logistics service provider integrates with the supply chain, it becomes more difficult to determine what the

product is considered to be. The same factors also complicate setting up minimum standards for liability insurance.

2. Standard operating procedures

Many risks can be reduced by trying to eliminate human errors and putting in place adequate quality assurance processes. Many companies find it useful to put standard operating procedures in place to formalize the way services are provided. A separate standard operating procedure can be developed for various parts of the business, including administration, according to business needs and structure. The standard operating procedures are often developed by the management team in cooperation with the operative staff to ensure overall consistency and practical usefulness. They are working documents, with details reviewed at regular intervals.

Standard operating procedures are often required by both clients and control authorities as evidence of sound management in many industries. For logistics service providers which frequently use subcontractors, standard operating procedures can greatly facilitate processes. When acting as lead logistics service provider, a company is responsible for the overall performance of the supply chain process, even when several companies are involved. Differing standards can create inconsistencies and expose the lead company to unnecessary risks. The quality of subcontractors is evaluated at the point of engaging them to commercial operations and assessed throughout commercial relationships. On top of this, sharing standard operating procedures with subcontractors in advance can clarify expectations and reduce the need to learn through trial and error. The lead provider can also provide training and other support to their subcontractors to ensure adherence to the required standards.

The disadvantage is that with highly customized services, standard operating procedures potentially need to be drawn separately for every contract. While some administrative procedures may be the same, the operation of the supply chain, or the parts under the responsibility of the logistics service provider, can vary significantly.

Additionally, it may be necessary for the logistics service provider to adjust to the operating procedures of the customer when integrating with their supply chain.

3. Small and medium-sized enterprises (SMEs)

The limited possibilities for standardized conditions may have an impact on small and medium-sized enterprises (SMEs) in particular. Services such as supply chain management are often requested by large multinational companies, who cooperate with larger scale logistics service providers. As lead service providers they may then outsource some of the services to subcontractors, which can be much smaller firms. Therefore small companies may face difficulties in developing their services and gain access to clients requiring supply chain solutions. They also have limited resources for contract negotiations, and larger logistics service providers can push down prices of their subcontracts by using several subcontractors. In the Republic of Korea, legislation is planned to protect the position of smaller companies in trucking whereby standard freight fares may be introduced, and limitations can be imposed on the proportion of trucking that can be outsourced as well as on the number of subcontractors.

IV. COMPREHENSIVE POLICY FRAMEWORK FOR LOGISTICS: NATIONAL LOGISTICS STRATEGY

The previous chapters have highlighted the increasing complexity of the logistics industry and the expansion of the role of logistics service providers. Both industry and the government need to re-evaluate their approach to the logistics sector to ensure an effective and supportive institutional environment. In particular, there is a need for a unified approach to logistics policy to reduce inefficiencies, duplication and inconsistencies. While it may be easy to determine a responsible agency for companies operating exclusively in transport, logistics is no longer a matter for one agency alone but rather requires the cooperation of many government stakeholders and representatives of the private sector. The following two chapters discuss two aspects of coordination of policy: firstly, a national logistics strategy, and secondly a national logistics coordination mechanism to support and implement the strategy. Together, they form a comprehensive policy framework for the development of the industry in the short, medium and long term.

A. Examples of Coordination of Policy

1. China[5]

In China, the national logistics strategy is the responsibility of the Ministry of Transport, restructured in 2008. In addition to planning policies and standards, the Ministry also supervises the implementation of plans. To support the implementation process, a national inter-ministry conference on logistics brings 15 relevant agencies together once or twice per year.

Directing the work of the national government is the Five-Year Plan, the current (12^{th}) Plan covering 2011-2015. While the Plan includes economy-wide social and

[5] Based on "China's Twelfth Five Year Plan (2011- 2015)- the Full English Version" (available through http://www.britishchamber.cn/content/chinas-twelfth-five-year-plan-2011-2015-full-english-version) and presentation "Logistics Industry in China: Development Review and Processes", Ministry of Transport of China, July 2010 (http://www.unescap.org/ttdw/FFmeeting/FFForum_2010/4.pdf).

economic policies, it also indicates the priorities of the Ministry of Transport. The 12th Five-Year Plan includes a specific reference to the development of a "social, professional, information-based modern logistics system". Separately, the Plan mentions the development of third-party logistics, integration of logistics resources, enhancement of logistics infrastructure, increased efficiency and reduced logistics cost. In addition, the Plan promotes the development of regional distribution systems and logistics clusters.

The Plan aims to create an enabling environment for exports. To achieve this, it recognizes the linkages between logistics and other industries by promoting agricultural products, bulk mineral products, key industrial areas and "other fields important to the development of logistics". The logistics industry also benefits in other ways, in particular through the optimizing of the policy and functions of the customs agency. Additionally, the logistics industry itself is recognized as an international service with the potential to trade globally and earn foreign exchange for the country.

A key aspect, which combines the development of logistics infrastructure and increased efficiency, is the support for increased intermodality. Ports, freight stations and logistics parks are recognized as priority areas for upgrading and expansion, with increasing focus on the coherence of the logistics network. In addition, specific efforts are made to support services such as roll-on/roll-off transport, direct transport between river and sea, and sea-rail combined container transport. The "software" to increase efficiency is the enhancement of services relating to customs formalities, insurance, and commodity inspections, in addition to other services.

To support "information-based" logistics services, the Ministry is accelerating the establishment of a public information platform for the logistics industry. A significant component of the integration of various logistics information systems is the development of basic data standards and data exchange specifications. In addition to extensive technical work, the introduction of such standards requires the introduction of appropriate supporting and guiding policies.

Standardization is also promoted in other aspects of logistics services through a standardization programme. In cooperation with other relevant agencies, the Ministry is revising and drafting industry standards, carrying out outreach and training activities, and introducing measures to encourage enterprises and government agencies to adopt the relevant standards. In its role as supervisor of the industry, the Ministry is developing a quality and credibility assessment system for enterprises and employees for enhancing professional standards. In addition, the standards for entry and exit to the industry are being revised.

The Five-Year Plan emphasizes the need to develop the capacity of third party logistics companies and modernization of logistics services. As a response, the Ministry is introducing measures for the establishment of large-sized port groups and third party logistics companies. Transport companies and intermediary service providers are encouraged and guided to expand operational scope and work on brand building. The support for enhancing outsourcing in the industry can also strengthen the development of third party logistics providers. To support the long term development of the industry, the Ministry is also promoting the technological advancement of logistics industry.

2. Indonesia[6]

The Indonesian National Logistics Blueprint sets out the roadmap for the development of the industry by government, local and provincial authorities and the private sector over the period 2011-2015. The national logistics strategy was formulated through the cooperation of a range of experts and practitioners, including relevant ministries and government agencies, private sector (through associations), international institutions and academics. The final output, the Blueprint of the Development of the National Logistics System, was approved in March 2012.

[6] Based on "Strengthening Indonesian Logistics Performance", presentation by the Coordinating Minister for Economic Affairs of the Government of Indonesia (Denpasar, 15 July 2010), and "Development of National Logistics System Framework", presentation by Coordinating Minister for Economic Affairs of the Government of Indonesia at Regional Seminar on Development of Efficient and Effective Logistics Systems (Hangzhou, 7-8 May 2013).

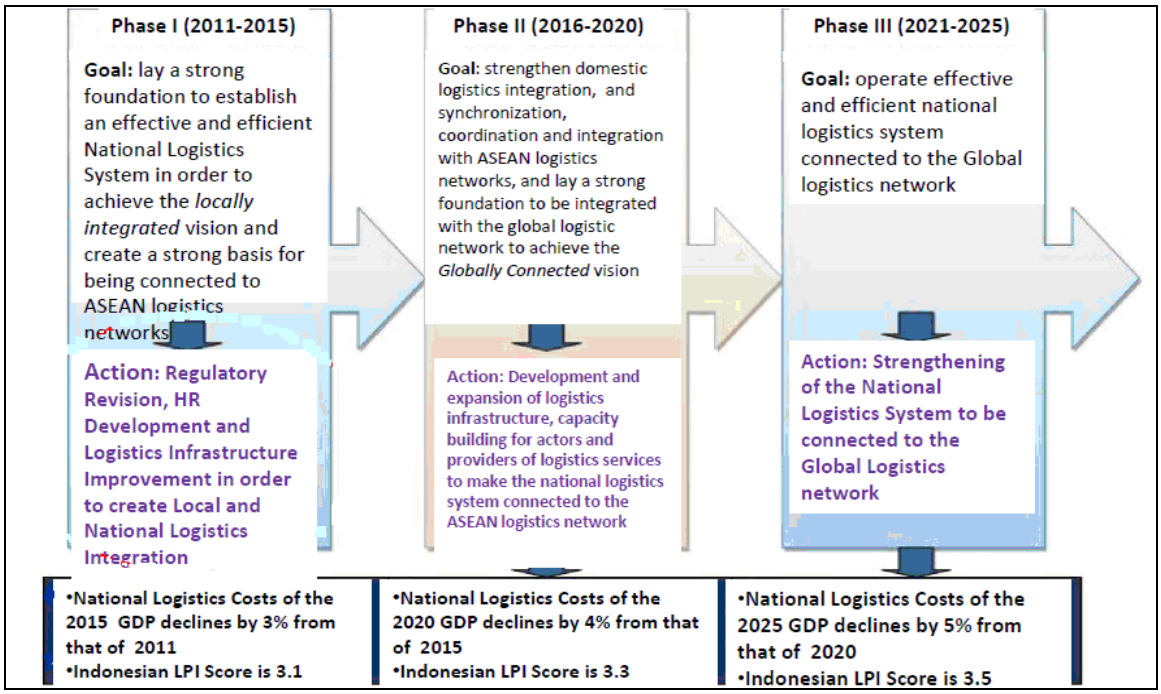
The key drivers for the development of the Blueprint were the need to enhance the logistics competitiveness of Indonesia and to improve the readiness of the country for the increasing integration expected from various strategies under the Association of Southeast Asian Nations (ASEAN), in particular the ASEAN Economic Community which is scheduled to come into being in 2015. Major logistics problems included lack of clarity over the most important commodities, poor state of infrastructure, poor human capacities in the logistics industry, limited use of information and communication technology (ICT), regulatory barriers and lack of institutional coordination and capacity.

As a result, the Blueprint identifies six key drivers for logistics: human resources, ICT, logistics service providers, infrastructure, harmonization of regulation and policy, and key commodities. The identification of key commodities supports the prioritization of infrastructure development for each region and enhances the impact of infrastructure improvement, visible in indicators such as ship turnaround times and transit times, population reached by ferry, average speeds and total value of damaged goods. Improvement of regulation and policy can also decrease the time and cost spent on transport. In addition, strong institutions reduce uncertainty around return for investment on infrastructure projects, which can promote further improvement of logistics networks. Cost reductions in logistics are further targeted through measures to improve human capacity, promotion of ICT applications and the development of logistics service providers.

Due to Indonesia's archipelagic geography, the logistics network also has a strong social aspect. Integration at the local and national levels (between islands) is a key for improving social welfare and ensuring delivery of basic public goods. From the global perspective, better connectivity through reduced logistics cost is also identified as a key determinant of national competitiveness, and as a component of integration within the ASEAN community. The enhancement of all the key drivers contributes to the vision of the Blueprint, "locally integrated, globally connected for national competitiveness and social welfare."

The measurement of progress in the implementation of the Blueprint is set out in terms of logistics cost as a percentage of gross domestic product (GDP) and the Logistics Performance Index (LPI), with milestone targets in 2015, 2020 and 2025. In Phase I, a foundation is established for the national logistic system, focusing in particular on local connectivity. Priority is given for regulatory revision, development of human capacity through standardization and accreditation, and improvement of infrastructure, with particular focus on key economic centres. In Phase II, the focus is shifted to regional connectivity and integration with ASEAN logistics networks, with the special aim of developing a nationwide integrated logistics information system. An international certification system is also planned for logistics service providers. In Phase III, further integration of the network is designed to support intermodal transport, and the logistics system is connected to the global logistics network. In this way, each Phase is built on the previous one, with focus being on setting up conditions for the next stage. (The phases are presented in Figure 2.)

Figure 2. The Indonesian National Logistics Blueprint, by phase



Source: "Development of National Logistics System Framework", presentation by Coordinating Minister for Economic Affairs of the Government of Indonesia at Regional Seminar on Development of Efficient and Effective Logistics Systems (Hangzhou, China, 7-8 May 2013).

The implementation structure is discussed in more detail in Chapter V.

3. Malaysia[7]

The national logistics plan of Malaysia is incorporated into the Third Industrial Plan for 2006-2020, coordinated by the Ministry of International Trade and Industry, which includes logistics as a priority industry. Preceded by an in-depth analysis of the current state of the logistics industry, the Plan then sets out clear targets based on the expected increase in total merchandise trade, in terms of million tonnes of total marine cargo, air cargo trade and cargo volume by rail freight from 2005 to 2020. This is to be achieved through six strategic thrusts.

(1) Creating an efficient and competitive logistics industry to support Malaysia's industrialization efforts;

An efficient and competitive industry is created through the encouragement of capacity building and adopting new practices in the industry. Specifically, the plan mentions the enhancement of operations to cover the whole supply chain (door-to-door), the establishment of a professional accreditation body, and a shift in trading practices to exporting on CIF basis and importing on FOB basis.[8] As a further measure to support the industry, government-linked companies are encouraged to use the services of domestic logistics firms for international trade. Assistance is provided to logistics companies looking to expand their capacity and activities through mergers and acquisitions, and the building, repair and upgrading of Malaysian ships. Port terminal operators are encouraged to extend port charge discounts to freight forwarders and non-vessel operating common carriers which are involved in value-added activities.

At the same time, opportunities to build capacity through foreign partners are recognized. A higher level of foreign equity is allowed for certain logistics service

[7] Based on "Third Industrial Master Plan (IMP3) 2006 – 2020" (available through: http://www.miti.gov.my/cms/content.jsp?id=com.tms.cms.article.Article_8e595aba-7f000010-72f772f7-733da6e4).

[8] Cost, insurance and freight (CIF), Free on board (FOB)

companies, such as container shipping companies offering intermodal integrated door-to-door services, non-vessel operating common carriers offering services to small shippers, and 3PL and 4PL companies. The purpose of this measure is to encourage multinational companies to include Malaysia in their global supply chain, thus offering more opportunities for the domestic industry. Shipping companies are also encouraged to form strategic alliances with foreign enterprises.

Special attention is also paid to the international links of Sabah and Sarawak, with initiatives to improve the infrastructure to allow them to act as regional hubs, and opening entry to foreign shipping companies and logistics service providers to expand the transport services available and to enhance growth in cargo volumes to and from the two regions.

(2) Developing the industry in particular transport modes to operate in a competitive international environment;

Within the transport sector, multimodal transport modes, national transport corridors and inland waterways are highlighted. This is to relieve pressure from the congested road network and to enhance linkages to distribution parks and other infrastructure. The existing plan for the national rail network will be reviewed to include development of integrated terminal facilities in various locations and improvement of intermodal linkages. The potential of inland waterways in areas with large rivers will also be explored.

Initiatives to promote intermodality are planned to be private sector driven, with the cooperation of Malaysian Railways. An assessment will be carried out to consider the expected impact on road haulage companies and design mitigation measures if required.

(3) Expanding and upgrading the capacity of the industry to enhance its participation in global supply chains;

The participation of the domestic industry in global supply chains is supported through several measures. The national transport corridors identified in the strategic thrust 2 and strategic logistics centres are to guide the selection and promotion of growth areas such as inland depots, specialized warehousing facilities, regional logistics operators and virtual logistics hubs. Port and airport operators are encouraged to form international alliances and to expand operations globally. For 3PLs and 4PLs, support can be provided for exploring export opportunities and outward investment. On the institutional side, regulations and rules are being harmonized and streamlined to create a supportive regulatory framework.

(4) Intensifying the application of new ICT in the industry;

The application of new technology is seen as a key factor for a more competitive industry. In particular, the enhancement of skills and capacity in managing and controlling information is an opportunity for the development of services for the broader regional hinterland, with Malaysia as a virtual hub. This links with the overarching aim to expand the service offering of domestic logistics companies, with enhanced supply chain management services. Further implementation of e-systems is planned for a paperless customs service, through a web-centric e-logistics system. Upgrading the e-services of government agencies involved in trade will feed into the development of a single window system. In addition, the use of other technologies in logistics is encouraged, such as voice recognition technology, RFID (radio-frequency identification), and satellite positioning systems.

(5) Ensuring an adequate supply of competent workforce to meet the long term requirements of the industry;

Re-training and life-long learning in technical, commercial and operational skills are encouraged to upgrade the capabilities of the workforce involved in logistics. Links

with foreign institutions are to be established to promote the enhancement of standards to international levels.

(6) Strengthening the institutional support through inter-ministry and agency coordination in the planning, implementation and monitoring of policies and measures affecting the industry.

The outlined plans are accompanied by the enhancement of institutional support, the most prominent of which is the establishment of the National Logistics Development Council and the Supply Chain and Logistics Centre, both described in more detail in Chapter V. In addition, relevant rules and regulations are set to be reviewed by the government, in particular those relating to the safety and security of the supply chain. The government will also consider introducing the regulation on duties and obligations of road hauliers. Licensing policies on road transport and employment of foreign experts is also to be reviewed.

4. Republic of Korea[9]

The Republic of Korea has been developing comprehensive logistics plans and regulations since the 1990s. Prior to this, logistics plans focused on one transport mode at a time. Since the 2000s, logistics policies have focused on developing logistics as an industry, rather than a supporting function of manufacturing, and developing the Republic of Korea as a logistics hub. As a concrete sign of this, the Goods Distribution Promotion Act enacted in 1991 was replaced by a comprehensive Framework Act on Logistics Policies in 2007.[10] Every five years, a 10-year National Logistics Master Plan is developed based on the guidelines set by the Act.

[9] Based on the Framework Act on Logistics Policies (text available from http://elaw.klri.re.kr/eng_service/lawTotalSearch.do), and the Korea Transport Institute (2012), *Economic growth and transport models in Korea*.
[10] Also known as Basic Logistics Policy Act.

(a) Framework Act on Logistics Policies

The Framework Act on Logistics Policies provides the legal framework for the development of the logistics industry. It sets out the duties of both public and private sectors at various levels (from national to local), and draws particular focus on the institutional support for the industry and the promotion of efficiency and competitiveness. The logistics policies under the Act aim to develop the logistics industry systematically by "promoting prompt, punctual, convenient and safe logistics activities and integrating the policies of the government related to logistics interconnecting harmoniously".[11]

The Framework Act stipulates the formal process for the development of the national logistics plan. The Ministry of Land, Transport and Maritime Affairs (MLTM)[12] is mandated to formulate a ten-year master plan for national logistics every five years, which sets the direction for national logistics policy. The content of the plan is described by the Framework Act, and includes:

- Consideration of changes and developments in logistics in the Republic of Korea and overseas;
- Matters concerning each logistics function (transport, storage, loading and unloading, packing, etc.) and the coordination of policies regarding each mode of transport;
- Prioritization and investment (and disinvestment) plans for logistics facilities and equipment;
- Development of infrastructure for a more integrated system;
- Measures for the improvement of efficiency in logistics through standardization, collaboration, enhancement of information literacy, etc.;
- Measures to strengthen the competitiveness of the industry;
- Training human resources for logistics and development of logistics techniques;

[11] Article 3, Framework Act on Logistics Policy.
[12] Following government reorganization, the current name of the Ministry is Ministry of Land, Infrastructure and Transport.

- Measures to support the internationalization of the industry; and
- Other measures considered necessary.

The Ministry is supported by the relevant government agencies, local authorities, logistics enterprises and other relevant organizations. In addition to the ten-year Master Plan, the Ministry is also mandated to produce a yearly execution plan. A Master Plan for Regional Logistics is also formulated by each city mayor to complement the national Master Plan, with the same content but a local focus.

The Framework Act addresses the efficiency of the logistics system through three factors. Firstly, the expansion of logistics facilities and equipment is supported by tasking the MLTM and the Ministry of Knowledge Economy [13] with recommending and supporting (administratively and financially) the expansion of facilities and equipment by logistics enterprises. Special attention is paid to the consistency of facility development in terms of connectivity and avoiding overlaps. Funds may be provided also for collaboration on facilities and equipment.

Secondly, standardization of logistics, in terms of equipment and calculation of logistics cost in particular, is encouraged. The Act allows for the preferential treatment of companies adopting standardized equipment, for example by giving financial support or discounted service rates at public logistics facilities.

Thirdly, the importance of developing ICT capacity for logistics efficiency is recognized. The promotion of use of information systems is assigned to the MLTM, Ministry of Knowledge Economy and the Korea Customs Service. The Act provides the possibility for the financial support of related plans for development and operation of facilities and programmes. In addition, the Act supports the construction of function-specific and integrated logistics information networks by relevant government agencies, if deemed necessary for the promotion of collection, analysis, processing and distribution

[13] Following government reorganization, the current name of the Ministry is Ministry of Trade, Industry and Energy.

of logistics information. For this purpose, the subcommittee on logistics facilities is indicated as a possible coordinator.

The MLTM is also mandated to construct and operate a national logistics database. Use and development of electronic documents, taking into account data safety, is supported, and the MLTM is tasked with formulating a plan for the development of standard electronic documents and to support adoption of electronic documents through promotion initiatives and other incentives.

One of the key aims of the Framework Act is the strengthening of the competitiveness of the industry. The Act allows the MLTM to offer preferential treatment for the development of logistics facilities, and to support the raising of funds for the purpose of improving efficiency in the industry. In addition, the Act actively supports the development of third party logistics companies, and the Ministry is mandated to take measures, including financial support, to support companies who wish to switch from their own logistics to third party logistics providers.

The Act also sets out the outlines of a certification scheme for logistics companies providing transport, warehousing and value-added services. While the certificate details are not issued in the Act, it provides the responsible authority ("competent Minister") the right to revoke the license under wrong-doing or if the company no longer meets the requirements for the certification. The Act also states that the certification is to be administrated by a certification centre appointed by the MLTM, supervised and partially funded by the Ministry. The certification is to be awarded by the competent Minister, and the certified enterprises may receive benefits such as preferential access to facilities such as logistics terminals. The government can also provide support for the expansion of business and development of capacity and services (for more information on the realized certificate, see Box 1).

The Framework Act also contributes to the control of entry and exit to the "international logistics mediation business" (international freight forwarding) through

minimum standards.[14] An operator intending to engage in international freight forwarding has to register with the MLTM, and generally possess capital of not less than KRW 300 million (referring to appraised value assets of not less than KRW 600 million if not a juristic person), and should have indemnity insurance of not less than KRW 100 million. Registration is not possible for persons who are found incompetent or who have a record of certain criminal offences. The registration can be revoked in case of wrong-doing or if the company no longer fulfills the stated requirements. The Act also promises government support for the incorporation of an association by international freight forwarders.

The Act also addressed the need to develop human capacity. Training of logistics service professionals is to be addressed by the MLTM through several measures:

- Education and training activities to build capacity in the industry;
- Development of educational programmes and materials promoting increasing efficiency and internationalization of the industry;
- Support for invitation of foreign logistics colleges to the Republic of Korea and joint activities between foreign and domestic colleges;
- Providing funding to research institutes, universities and other logistics institutions; and
- Developing a qualifying exam for the field of "logistics administrator",[15] and giving those companies which employ such personnel preferential treatment in the form of administrative or financial support.

[14] "A business mediating logistics of importing and exporting goods by making use of logistics facilities, equipment, etc. of others in his/her own name and by his/her calculation at the request of others." Article 2 (1) 11, Framework Act on Logistics Policy.
[15] "Plan, investigate, research, diagnose, and evaluate matters that require specialized knowledge in connection with logistics activities, or consult and advice thereon, and perform other duties necessary for logistics administration". Article 52, Framework Act on Logistics Policy.

Box 1. Logistics Company Certification in the Republic of Korea

Since 2006, logistics service providers can apply to receive the status of certified comprehensive logistics service provider. A separate global certificate has been issued since 2012.

Companies are evaluated on transport, facilities and services, with transport and facilities as core businesses. To highlight the range of services, the proportion of sales generated from logistics and 3PL services are assessed. Companies are awarded points on their diversity in terms of geographical locations and number of clients as well. Assets, sales and investment overseas are looked at to assess growth potential. The certificate also considers the availability of in-house experts and company training systems.

The Korea Transport Institute has been assigned as the organization in charge of the certification system, with operational funds from the government. Companies are evaluated based on the documentation provided and a site visit. Certification is renewed every two years.

The incentives for companies to apply for this certification include priority entrance to public logistics facilities and reputational benefit. Priority access to financial assistance measures is currently being considered.

Source: Interview with the Korea Transport Institute

The Act supports the development of a Logistics Association, and tasks the MLTM with providing administrative and financial support for the Association. A joint logistics support centre is described, intended to strengthen national competitiveness in logistics; to support the overseas expansion of logistics business; to carry out research to further develop the industry; and to consider other matters contributing to a more efficient logistics system.

Innovation in technology and logistics is supported by the MLTM through financial and administrative support for the adoption of new technology, research in logistics and eco-friendly means of service provision. The Ministry can also award prizes to agencies, enterprises or individuals who have significantly contributed to research in the field of logistics.

The MLTM is designated as the key agency for the promotion of international logistics business. This includes keeping the National Logistics Policy Committee,

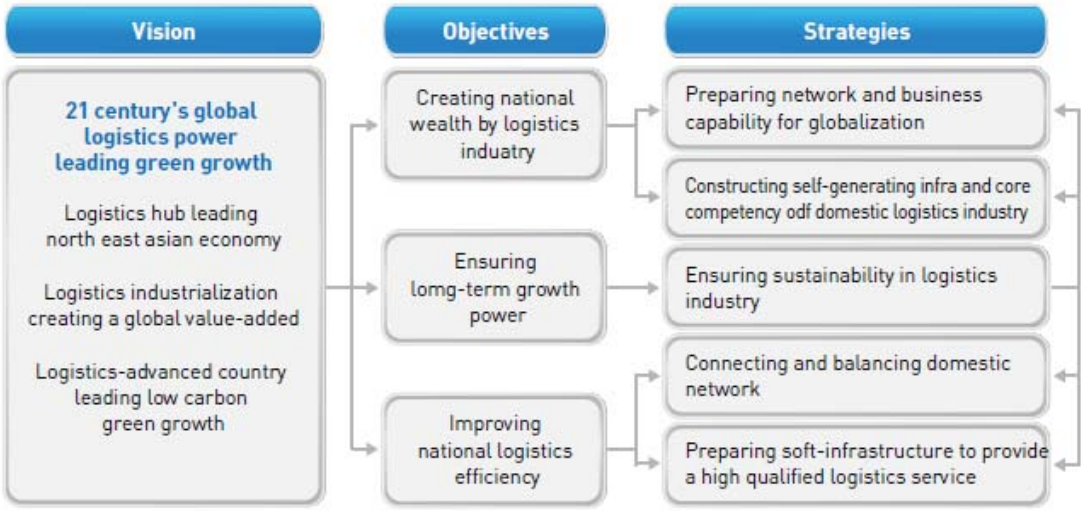
described in more detail in Chapter V, involved in any intergovernmental agreement or collaboration relevant to logistics. In addition, support can be provided for activities relating to international exchange of information and technology, international harmonization of standards, international research, scientific seminars and conventions, establishment of organizations supporting logistics activities between countries, attracting foreign enterprises and investment promotion.

Investigations may be carried out on the current state of the logistics industry by the MLTM when deemed necessary. In those cases, the Ministry can request the help of relevant central, local and private agencies supported by the Act. Investigations can also be carried out at a local level.

(b) National Logistics Master Plan

The vision of the national logistics master plan for 2011-2020 is for the Republic of Korea to become a leading hub for Northeast Asia through improved cost competitiveness; development of the logistics industry into providing value-added for the global market and becoming one of the five leading industries of the country; and the logistics industry leading low carbon green growth, with significant reductions in CO_2 emissions from logistics. The vision further feeds into three strategic objectives, contributing to five development strategies. The implementation framework is presented in Figure 3.

Figure 3. Implementation framework of National Logistics Master Plan



Source: http://www.koti.re.kr/mail/news/KSP02_chapter04.pdf

Each strategy is translated into specific implementation tasks. For the development of the infrastructure, there are six distinct tasks. Firstly, logistics facilities are to be systematically developed and their service enhanced through a review of current and planned facilities to increase cohesion and integration. Secondly, efficient local logistics are to be promoted through the enhancement of the competitiveness of urban logistics, which is supported through measures such as including the requirement for improvement of logistics as mandatory for urban environmental renewal projects. Thirdly, research and development projects will be implemented to introduce and disseminate new concepts for freight transport systems, particularly relating to development of green transport and promotion of multimodality through integrated technology. Fourthly, a comprehensive support system to promote rail logistics is established, and the efficiency of rail transport enhanced through both regulatory and financial support, including consideration of mandatory transport of heavy freight for long distance or dangerous goods. Fifthly, the support for revitalizing coastal shipping is strengthened through measures such as berths reserved for coastal shipping and strengthened financial support for securing coastal vessels. Lastly, the competitiveness of major trading ports is to be

enhanced by promoting regional specialization of ports, the expansion of Busan port, the commercialization of port unions and the establishment of training operation systems.

The development of “hardware” is complemented by six implementation tasks for “software”. Firstly, the Master Plan seeks to strengthen the implementation of logistics policies by setting up a policy coordinating body (national logistics committee), supported by a dedicated unit for continuous support for logistics policy development. Secondly, a statistics management system is built as an independent organization to support policy making, with the cooperation of the national statistics authority. Thirdly, the ICT infrastructure is to be expanded in key logistics hubs, and a nationwide logistics information network is to be established. Fourthly, human resources in logistics are to be developed through a mid- to long-term national plan. The national certification system is also to be improved by moving away from written tests towards the evaluation of practical performance. At the same time, the employment of foreign nationals is eased, and qualified personnel are allowed to work in logistics companies as a substitute for mandatory military service. The Master Plan also includes implementation tasks for the strengthening of the standardization programme through greater integration of the work of different ministries, and the enhancement of logistics cooperation capabilities in the industry.

The Master Plan addresses sustainability from several perspectives. Firstly, it emphasizes the need to establish an environmentally friendly logistics system as a response to global environmental regulations. Particularly, a plan is to be developed for the reduction of greenhouse gas emissions, the establishment of a green logistics management system and the preparation of guidelines on green logistics. In addition to the environmental aspect of sustainability, the plan also considers the need to improve welfare and working conditions in the industry, particularly in the maritime industry. A plan is to be developed to improve the ability of the industry to respond to disasters, and to improve safety in transport. An integrated system is to be developed for logistics security, combining the laws and institutional systems of the MLTM, the Ministry of Knowledge Economy, the Korea Customs Service and the National Intelligence Service.

Social regulation is to be reviewed to increase transparency and fair play in the logistics sector. Special attention is given to the working conditions of drivers and the training of staff in safety and disaster preparedness. Long term growth potential of the industry is promoted through measures to make the industry more accessible to job seekers, to prepare for the aging of the population, and to stimulate demand. This is done by improving the proximity of housing to jobs by developing downtown logistics facilities, greater automation of work to improve worker productivity, and greater outsourcing of public logistics needs respectively.

To improve the industry's international competitiveness, logistics hubs are to be further developed into industrial complexes. At the same time, the specialization of ports is expected to improve their competitiveness, and institutional support for attracting companies to hinterland and free trade zones is to be enhanced. The competitiveness of flagship carriers is to be improved by addressing the regional concentration of air routes and enhancing international cooperation. Measures to enhance maritime transport include international cooperation and technical advancement for the expansion of networks, including a China-Japan-Republic of Korea port alliance and a strengthened coastal feeder network. Companies operating internationally are to be supported in their efforts to expand their operations and improve their global market share through financial support, consultation services and promotion of best practices. International cooperation is also to be strengthened to improve global intermodal transport networks. Country-specific plans for international cooperation, and sharing of knowledge and experience are promoted.

The capacity of domestic industry is also enhanced through a system to promote structural stability and advancement of the industry, including review of relevant regulations and support programmes for competent logistics companies. Other measures include the support to small companies to specialize, a shift to a permit based on qualifications (rather than adjustment of supply and demand), granting corporate transport the same support as public transport, and establishing a registration system to secure registration standards. Also the home delivery service industry is to be improved

through rationalization of charges, review of qualification criteria and improving working conditions.

Third-party logistics is promoted through measures such as tax breaks and consulting services. In addition, to change the perceptions of shippers, the shift from one-party logistics to third-party logistics is recorded in the evaluation indices for logistics industry. Outsourcing by public institutions to third party logistics companies is encouraged. A global logistics company certification is used to support the internationalization of the industry.

5. Thailand[16]

Based on Cabinet decision in 2004, a national Strategy on Logistics for the Kingdom of Thailand was published. The Strategy sets out the national vision of "turning Thailand into the logistics hub of Southeast Asia and the Greater Mekong Region in particular" and presents an analysis of the strengths and challenges of the industry for the achievement of this goal. The publication of the Strategy was followed by Thailand's Logistics Development Strategy for 2007-2011, which outlined more detailed medium term goals, strategies and key performance indicators. A second Logistics Development Strategic Plan (2013-2017) has also been developed.

(a) Strategy on Logistics for the Kingdom of Thailand

The Strategy highlights the importance of logistics to the wider economy of Thailand, and the particular challenges faced by logistics service providers, such as need for greater cost-efficiency and education of personnel. Interviews with companies in Thailand were used to identify problems and requirements, highlighting in particular the need for support in problematic areas, reliability in information and data transmission,

[16] Based on "Strategy on Logistics for the Kingdom of Thailand", "Thailand's Logistics Development Strategy (2007-2011)" (available from http://eng.nesdb.go.th/Portals/0/tasks/dev_logis/eng/A.pdf), and "ASEAN Member Countries' Preparation for ASEAN Logistics Connectivity", presentation by Dr. Porametee Vimoisiri, NESDB, 30 July 2013.

decrease in the risk of damage to goods and insufficient basic infrastructure for goods. Lack of regulatory coordination is also highlighted.

The observed solution for the changing environment is the internationalization of "classical" transport companies, and expansion of services to logistics service provision. The strategy therefore emphasizes that domestic companies need to move on from the mere provision of physical transport and competing on reductions in costs. Instead, they need to consider advantages, such as guarantee on delivery time, ICT services, and damage protection. The companies are also encouraged to integrate with major export/import customers, and form alliances with logistics facilities and other service providers. The importance of benchmarking performance is also emphasized.

The Strategy also identifies key transport corridors for improvement and highlights the importance of multimodal transport infrastructure. Major logistics centres are suggested for the borders and the junctions of corridors to enhance competitive thinking and efficiency of multimodal transport. In addition, they can act as hubs for logistics companies and other industries. Efficiency is also supported through the adoption of new technologies, such as e-logistics. Revisions to legislation are proposed to avoid discrimination of internationally operating transport and logistics companies and to facilitate international cooperation, following the case of Singapore as the benchmark.

The implementation of the Strategy is based on two pillars, a White Paper proposing concrete measures in transport and logistics, and the establishment of a logistics council to implement the White Paper (discussed further in Chapter V).

(b) Thailand's Logistics Development Strategy for 2007-2011

The Logistics Development Strategy sets out a more detailed plan for the shorter term development of the industry. The goal of the strategy is to lower logistics cost as a proportion of GDP from 19 per cent in 2005 to 16 per cent in 2011. This is to be achieved through five strategic agendas, presented in Table 4.

Two major strategies contribute to the promotion of the development of efficient and traceable supply chains, i.e. the strategic agenda of business logistics improvement. Firstly, enterprises are encouraged to understand the value of logistics management and best practices, as well as the use of information technology in the supply chain, in order for them to improve their logistics management techniques. Measures are aimed at key industries such as agricultural, industrial and service sectors. Secondly, a variety of measures are implemented to support supply chain visibility and development of logistics offering towards supply chain optimization. Greater efficiency in supply chain can be achieved through clustering, by encouraging standardization in the supply chain, and supporting associations in implementing efficient logistics management. Efficient transport systems for perishable and frozen goods are emphasized.

The Strategy offers key performance indicators for the achievement of the strategic agenda. Key performance indicators for enhanced logistics management techniques are lower logistics costs, greater customer responsiveness, increase in the number of logistics service providers, and greater understanding among entrepreneurs of the importance of logistics and the need for increased use of logistics services. For supply chain visibility and performance, progress is measured with two performance indicators: lower food transportation costs, and the number of business associations collaborating in the development of logistics services.

The second strategic agenda, transport and logistics network optimization, is focused on enhancing Thailand's position as a regional hub for logistics. The integration of the logistics system refers in particular to the transport infrastructure. The motorways, feeder systems, logistics centres and container yards contribute to a more connected logistics system and support the development of regional manufacturing and trading centres. Additionally, the deep sea ports of the west coast are to be developed and connected with regional transport routes and major trading centres. Performance indicators include reduced transport times on main routes and lower investment costs of the private sector in the development of logistics centres.

The network is to be optimized also in terms of energy consumption through better management of transport. Central to the strategy is the promotion of rail transport, including improvement of infrastructure and the rearrangement of the State Railway Authority, with a more focused role on railway and passenger train networks. Meanwhile allocation of locomotives and bogeys, handling services and implementation of latest innovations is left to the private sector. Waterway and pipeline transportation is also considered to be the responsibility of the private sector. The key performance indicator is reduced logistics costs for companies, relative to their sales revenues.

Logistics service internationalization is included as a separate strategy, highlighting the perceived importance for maintaining the competitiveness of Thai logistics service providers and enhancing their value-added. Internationalization is supported through the promotion of commercial alliances where service complementarities exist. Joint ventures and alliances are encouraged, both between domestic companies and with international service providers, in addition to universities and the Thai Federation on Logistics. Business-matching, cost sharing and information exchange between companies is seen as a contributor to a more integrated logistics system. Progress is measured as an increase in the number of logistics service providers and increased cooperation between businesses.

There is also a focused strategy to support local industries through the development of logistics service providers serving SMEs and agricultural producers in particular. In addition, the development of human resources of domestic companies is enhanced by introducing a multimodal transport service and transport-insurance service, and by supporting the expansion of their business through updated investment-promotion criteria and other related rules and regulation. Specifically, the strategy aims to increase the sales revenues of logistics service providers with a majority Thai shareholding, and to increase the number of specific service providers.

Trade facilitation enhancement is included as a strategy to reduce operators' import and export handling costs. This is to be achieved through the development of e-Logistics and Single Window Entry into a central system for importers, exporters and logistics service providers, linking the private sector and government agencies. As a result, reduced processing time in export and import are expected, as well as lower transaction costs for importers and exporters. Paper use is also reduced as part of a move towards a paperless system. E-commerce is encouraged by expediting the enactment of four Royal Decrees relating to electronic transactions, and by setting up information sharing standards.

Import and export processes are further facilitated through the improvement of trade-related taxation and customs clearance procedures, reducing costs and time of transporting import and export goods. Distribution and logistics centres also contribute to the facilitation of trade and increase the competitiveness of Thai businesses through lower distribution costs. Efficiency and service quality of inspections for pesticides, toxic substances and contaminants is also to be increased, with the aim of lower total export costs.

Table 4. Five Strategic Agendas, Thailand's Logistics Development Strategy for 2007-2011

Strategic agenda	Goal	Hosts
1. Business logistics improvement	Businesses in strategic industries will have an efficient logistics system that will be traceable throughout the supply chain.	Ministry of Agriculture and Cooperatives, Ministry of Industry, Ministry of Commerce, Ministry of Science and Technology, Ministry of Information Technology and Communications, National Economic and Social Development Board, and the Thai Federation on Logistics.
2. Transport and logistics network optimization	To set up an integrated logistics-management system to accommodate Thailand's status as Indochina's logistics hub in terms of gathering, transferring and distributing merchandise, both regionally and internationally.	Ministry of Transport, Ministry of Commerce, Ministry of Energy, Ministry of Science and Technology, National Economic and Social Development Board, and the Thai Federation on Logistics.
3. Logistics Service internationalization	To upgrade Thai logistics service providers so that they remain competitive and their services remain in the high value-added category.	Ministry of Commerce, Ministry of Industry, Ministry of Labor, Ministry of Education, National Economic and Social Development Board, and the Thai Federation on Logistics.
4. Trade facilitation enhancement	To reduce operators' import and export handling costs.	Ministry of Finance, Ministry of Commerce, Ministry of Agriculture and Cooperatives, Ministry of Science and Technology, Ministry of Information Technology and Communications, Ministry of Health, National Economic and Social Development Board, and the Thai Federation on Logistics
5. Capacity building	To produce knowledgeable logistics personnel for both the manufacturing and the logistics service industries. To establish a data system and a mechanism for planning and monitoring the performance of Thailand's logistics strategies.	Ministry of Labor, Ministry of Education, Ministry of Industry, Ministry of Commerce, Ministry of Information Technology and Communications, the Office of Civil Commission, National Economic and Social Development Board, and the Thai Federation on Logistics.

Source: Based on Thailand's Logistics Development Strategy (2007-2011)

Finally, capacity building is required to produce competent logistics personnel. Training is encouraged by allowing tax deductions for companies for training expenses, by enhancing the capacity of training institutes, and by raising awareness of the benefits of logistics efficiency. The aim is to produce 100,000 logistics personnel at senior-executive, management and operator levels, and another 285,000 personnel in the logistics service industry by 2011. In addition, 1,379 trainers and lecturers with international-level logistics skills will be trained by 2011. The quality of research and training is also to be enhanced through cooperation between institutes, updating courses and teaching methods to international standards, and by creating a clear career path in the logistics industry. Logistics innovation is supported by development of tertiary education institutions. Progress is measured through an increase in the number of institutions offering logistics courses at international level, increase in number of research papers on logistics and the introduction of clear standards for logistics professionals and logistics labour skills.

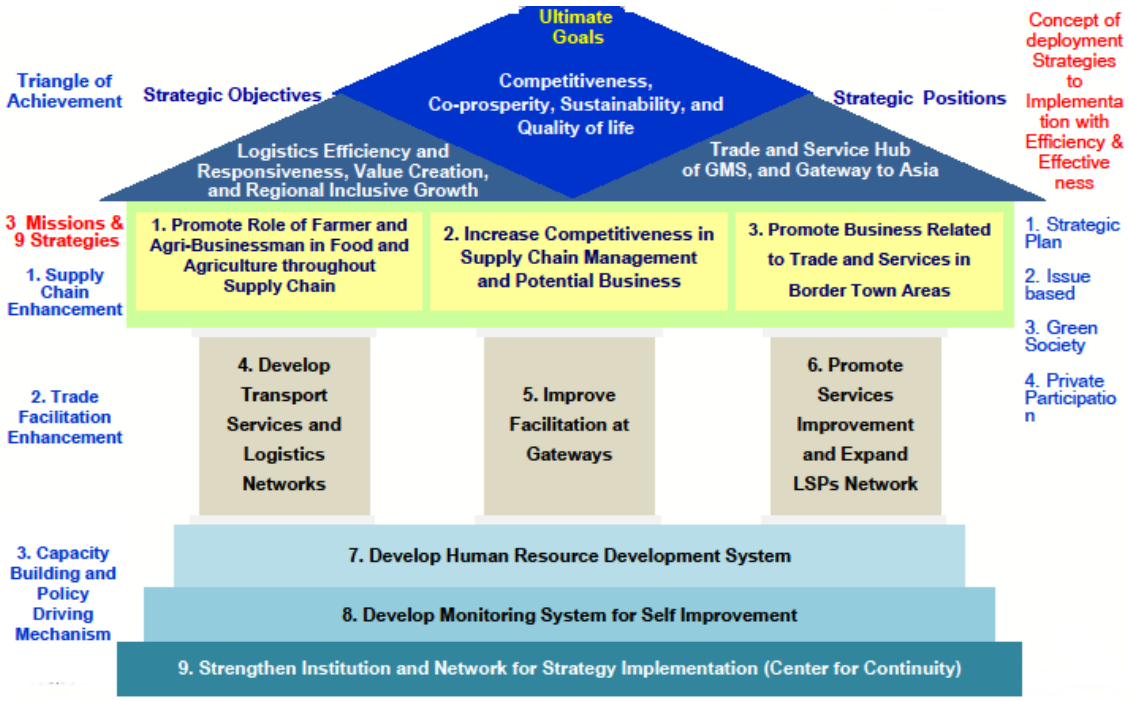
As part of capacity building, it is also recognized that the collection and development of logistics data is a key element to the development of national logistics strategy. At the national level, data is collected on commodity flows, operating costs and added value into a logistics management data system. The plan also includes the establishment of a national logistics development committee to coordinate and monitor policy, including government agencies and the private sector.

(c) Logistics Development Strategic Plan (2013-2017)

There are many similarities between the first and second Logistics Development Strategic Plans. The second Logistics Development Strategic Plan (2013-2017) is titled Trade and Supply Chain Facilitation for Competitive Advantage Enhancement, highlighting its focus on the supply chain view of logistics and the importance of facilitation. The Plan consists of three missions: Supply chain enhancement, Trade facilitation enhancement and Capacity building and policy driving mechanism, which are to be implemented through nine strategies.

The first strategy focuses on the agricultural chain, which was also a key focus for business logistics improvement under the first Plan. Trade facilitation also includes network improvement, in addition to the improvement of facilitation at gateways. The services of logistics service providers are enhanced through increase in competitiveness in supply chain management and potential business (Strategy 2) and promotion of service improvement and expansion of logistics service provider network (Strategy 6). As shown in Figure 4, the foundation of development of the industry is formed in the last three strategies: a human resources development system, monitoring of performance and the institutions for strategy implementation. As a new area, special strategy is declared on promoting trade and services in border areas.

Figure 4. Second Logistics Development Strategic Plan (2013-2017)



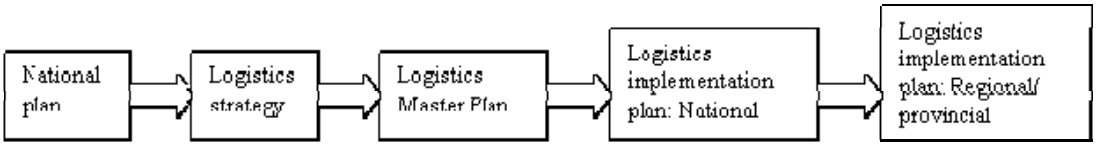
Source: www.adbi.org/files/2013.05.10.cpp.sess6.2.paijitprapapon.thailand.manufacturing.logistics.pdf

B. Features of Coordinated National Policy

National logistics strategy or logistics policy can take many forms. However, the overarching purpose of a national logistics strategy is to set out the national priorities and goals in the area of logistics in the short-, medium- or long-term, and to bring together the key steps that are considered necessary for the achievement of the national aims. A key driver for the national logistics strategies is to increase policy coherence across the management of the industry and to systematically address the changing global environment.

A national logistics plan is often tied to the overall national economic strategy. It can be directly a part of the national plan, as in the cases of China and Malaysia. Otherwise, the consistency of the plan with other national incentives needs to be addressed, for example by acknowledging the linkages from logistics to other industries and trade. A national long term logistics strategy is necessarily high-level, and requires a more detailed implementation plan to ensure effectiveness. The strategy is therefore followed by a logistics (master) plan for a given time period, for example 10 years. Relevant authorities then translate the goals set in the plan into a detailed implementation plan for their areas of responsibility. This can include also the development of implementation plans by regions or provinces. The flow of implementation is shown in Figure 5.

Figure 5. Flow of implementation for national logistics strategy



While generally under one ministry, such as the ministry for transport or a ministry in charge of economy or commerce, the development process can involve the participation of a wider range of stakeholders. In addition to relevant government

agencies, such as customs, ministry of trade and ministry of industry, private sector actors (most commonly represented by logistics associations and chambers of commerce) and academics can also contribute to the development of the strategy. In addition, national logistics operators, such as the railway company authority, port operator or national carrier, need also to be included in the strategy development process.

The exact content of the national policy depends on the priorities of the country in question. However, some common features emerge from the examples presented in Section A, which are presented in Table 5.

Many national policies identify priority infrastructure developments. The priorities can be determined by the identification of transport corridors, key terminals (in particularly ports), preferred transport modes (for example rail or inland waterways) or priority facilities (e.g. logistics centres), or be directed through the selection of key industries. Infrastructure development contributes to the creation of a more efficient and effective logistics system and promotes intermodality, which is recognized in the plans as a key element to modern logistics. For this reason, logistics centres and terminals are emphasized in several national logistics plans.

A national strategy can also outline the required steps for the streamlining of logistics regulation and policy. Facilitation measures, such as the introduction of national single windows and review of customs procedures, contribute to the efficiency of the logistics sector and enhance the competitiveness of the country as a contributor to global supply chains.

Table 5. Features of national logistics strategies

Country **Authority**	**China** Ministry of Transport	**Indonesia** Coordinating Minister for Economic Affairs	**Malaysia** Ministry of International Trade and Industry	**Republic of Korea** Ministry of Land, Transport and Maritime Affairs	**Thailand** National Economic and Social Development Board
Infrastructure	x	x	x	x	x
Modernization/third party logistics	x	x	x	x	x
Control/monitoring	x			x	
ICT	x	x	x	x	x
Human capacity	x	x	x	x	x
Harmonization and standardization	x	x		x	x
Trade and transport facilitation	x	x	x	x	x
Internationalization	x	x	x	x	x
Environment				x	
Logistics clusters	x		x	x	x
Key industries	x	x			x
Research	x		x	x	
Government outsourcing			x	x	
Foreign cooperation and employment			x	x	x
Intermodality	x	x	x	x	x
Logistics certification	x		x	x	

Many national logistics strategies recognize that logistics is an international industry, and emphasize the need for the national logistics policy to support the international potential of the domestic logistics industry. This can include the support and implementation of subregional initiatives, such as the ASEAN Economic Community, and programmes supporting the expansion of domestic companies internationally. The potentially beneficial impact of partnerships with foreign companies and employment of foreign experts is recognized. In several national strategies, the relaxation of immigration policies for logistics experts is suggested to promote further development of the industry.

Many national strategies recognize the changing nature of logistics service providers, and commit to the development of domestic industry in line with international trends. This may involve assistance for companies entering 3PL services, preferential treatment of companies expanding their service offering, and support for mergers and acquisitions to improve efficiency and competitiveness of domestic companies. Public institutions may also be encouraged to outsource their logistics functions as a way to offer more opportunities for the domestic industry to develop their services.

The importance of ICT makes it a key element of any national strategy. The national policy can outline details of single window and information platform initiatives, as well as general policies to improve the usage of technology for greater efficiency in logistics. Promotion of ICT is also connected with national capacity development plans, as ICT literacy is crucial for the successful use of technology. In several strategies, the need to improve logistics databases and data collection is addressed, in recognition that industry data is crucial for the development of the economy. Comprehensive data can also be an important resource for the private sector in the development of their services and management of their businesses.

The industry can be promoted through initiatives and aims relating to skills and qualifications. This can include plans to introduce professional accreditation and promoting further education in the industry, in addition to the measures aimed at liberalizing the employment of foreign nationals to fill in gaps in national know-how. Domestic logistics courses may be upgraded to international standards to provide more opportunities for capacity development. While focusing on industry-specific skills, general business skills may also be included to take into account the need for a change in the skillset for the logistics workforce.

As a related aim, the development of the industry can be supported with the promotion of harmonization and minimum standards in the industry, either through development of regulation or other means, such as providing incentives to those who adopt standardized systems. The working conditions of employees working in the

logistics sector, particularly truckers, may be addressed through a national strategy and master plan.

National strategies may also develop new forms of institutional support for the development of the logistics industry. The most comprehensive approach can be the development of a national logistics council/committee in charge of the implementation and further development of logistics policy. Institutional support can also include establishment of logistics research institutes to promote innovation and creation and sharing of knowledge.

Finally, national plans may outline the plans for implementation, including timeline and implementing agencies. According to national priorities, additional categories can be added, such as support for SMEs, promotion of e-logistics or the enhancement of green logistics.

While the development of a national strategy can be a time-consuming and costly exercise, a national logistics plan has several benefits. Firstly, it outlines a common understanding of national priorities in the fields relevant to logistics. Coordination of actions by various government agencies and the private sector is very complicated, and the various stakeholders may have different views on the appropriate action at different stages of industry development. By going through the consultation processes related to the development of a national strategy, stakeholders can agree on a common direction, and thus better determine their own contribution to the development of the industry. A related benefit is the use of logistics capacity development funds in a more efficient way, because actions are consistent and do not duplicate work by other agencies. A high-profile national strategy can also serve as a sign of government commitment to the development of the logistics industry and national and international connectivity. By setting concrete targets, the performance of the relevant agencies can be measured against the national strategy and implementation plans.

V. COORDINATION MECHANISMS FOR LOGISTICS DEVELOPMENT

Logistics development involves the cooperation of many government and private sector stakeholders. The development of logistics strategy and policy requires a continuing dialogue among stakeholders. A formal national coordination mechanism, rather than ad hoc consultation, can therefore be beneficial to promote cooperation and decision making.

A. Examples of Coordination Mechanisms

1. Indonesia[17]

In Indonesia the implementation of the National Logistics Blueprint is divided into several levels, presented in Figure 6.

At the top, the Coordinating Minister for Economic Affairs chairs the Committee on Acceleration and Expansion of Indonesia's Economic Development 2011-2025. This national economic strategy consists of several taskforces around the three major strategies, i.e. increasing the economic potential through economic corridors, strengthening national connectivity, and strengthening human resource capabilities and national science and technology. Of the three taskforces, the one relevant to logistics is the National Connectivity Taskforce, lead by the Vice Minister of National Development Planning. The Connectivity Taskforce takes responsibility over the coordination of activities on logistics, transport, ICT and development areas.

The National Logistics Team operates under the Taskforce and is headed by the Deputy Minister for the Coordinating of Industry and Trade Policy Affairs. The Team is responsible for the implementation of the National Logistics Blueprint. To complement

[17] Based on "Development of National Logistics System Framework", presentation by Coordinating Minister for Economic Affairs of the Government of Indonesia at the Regional Seminar on Development of Efficient and Effective Logistics Systems (Hangzhou, China, 7-8 May 2013), and www.kp3ei.go.id.

the expertise and perspective of the Ministry, the National Logistics Team is supported by an expert group of academics and practitioners. Additionally, the Team has a Secretary General.

The Team also includes six Working Groups, one for each of the key drivers of human resources, ICT, logistics service providers, infrastructure, harmonization of regulation and policy, and key commodities. The members of the working groups include representatives of relevant ministries or agencies, academics and practitioners.

Figure 6. Implementation structure of the Indonesian National Logistics Blueprint

Source: "Development of National Logistics System Framework", presentation by Coordinating Minister for Economic Affairs of the Government of Indonesia at Regional Seminar on Development of Efficient and Effective Logistics Systems (Hangzhou, China, 7-8 May 2013).

2. Malaysia[18]

The Malaysian National Logistics Development Council, set up in February 2007 as part of the Third Industrial Plan, acts as the focal point for coordination of logistics strategies, policies, regulations and rules. Its role is to provide leadership on issues relating to the development of the industry, to align logistics policies with the Industrial Plan and to assist in the streamlining of strategies and policies for the logistics industry. It also monitors and coordinates the implementation of programmes and activities by other relevant ministries, agencies and authorities at state and federal level. The council consists of representatives of "relevant ministries, departments, and agencies, as well as trade and industry associations, and academia."

The council has seven main responsibilities. Firstly, it assesses global developments which may impact the logistics industry at a national level. Secondly, it monitors domestic developments and acts as a mediator for conflicts of interests of logistics stakeholders. The council is also responsible for the development of a comprehensive database on the requirements of the industry, with particular focus on the relationship between transport and supply chains, both domestically and internationally.

The council is responsible for the development and monitoring of training programmes and related funding to promote human capacity development. The council is also responsible for initiating research on logistics. In addition to the general mandate on research, particularly relating to transport of specific commodities, SMEs and ICT, the council is tasked with the comprehensive review of the cabotage policy and its regulatory and structural implications on the domestic shipping industry. Additionally, the council is responsible for measures to promote greater outward-orientation of the Malaysian trading community, and promoting beneficial changes in practices (such as shifting to exporting CIF and importing FOB).

[18] Based on "Third Industrial Master Plan (IMP3) 2006 – 2020" (available through: http://www.miti.gov.my/cms/content.jsp?id=com.tms.cms.article.Article_8e595aba-7f000010-72f772f7-733da6e4).

A supply chain and logistics research and training body was also established under the supervision of the Council to undertake research as assigned by the council. The National Plan covers a range of issues relating to transport and logistics, from infrastructure (including the extension of the double-tracking project nationwide, support for inter-modal transport networks, development of national transport corridors, and development of distribution parks) to human resources development and institutional and regulatory frameworks. The research centre is set up as joint Government and private sector entity, with Government providing most of the funding. The private sector contributes to the funding, and may participate in research through the secondment of staff.

3. Republic of Korea[19]

The role of the National Logistics Policies Committee is set out in the Framework Act on Logistics Policies as a body deliberating matters concerning national logistics policies, under the control of the Ministry of Land, Transport and Maritime Affairs (MLTM).[20] Matters of particular relevance are:

- Policies concerning enhancing efficiency in the national logistics system;
- Matters concerning the development of logistics facilities;
- Policies concerning the development of the logistics industry; and
- Any matters falling under the effect of the Act or presented to the meeting by the chair as important for the interest of the national logistics industry.

The Committee is comprised of up to 20 members. The chair of the Committee is the Minister of Land, Transport and Maritime Affairs. In addition, the Committee consists of high-ranking representatives from several government agencies, reflecting the range of actors relevant to the logistics industry: the Ministry of Strategy and Finance; the

[19] Based on the Framework Act on Logistics Policies (text available from http://elaw.klri.re.kr/eng_service/lawTotalSearch.do).
[20] Following government reorganization, the current name of the Ministry is Ministry of Land, Infrastructure and Transport.

Ministry of Education, Science and Technology; the Ministry of Foreign Affairs and Trade; the Ministry for Food, Agriculture, Forestry and Fisheries; the Ministry of Knowledge Economy; the Ministry of Labor; the Minister for Land, Transport and Maritime Affairs; the Korea Customs Service; and the Small and Medium Business Administration.[21] In addition, up to ten persons with specialized knowledge and substantial experience can be appointed by the chair to sit in the committee. For investigations on specific matters, external expert advisors can be used by the committee.

The committee has three subcommittees, on logistics policies, logistics facilities, and on international logistics. The role of the subcommittees is to carry out preliminary research on matters to be discussed by the committee, according to their focus. In addition, the committee can request the subcommittees to consider particular topics. The Act also delegates some responsibilities directly to the subcommittees. For example, on matters concerning the construction of logistics information networks, the subcommittee on logistics facilities is tasked with coordinating with the MLTM.

Regional Logistics Policies Committees can also be formed under the control of mayors or governors.

4. Thailand[22]

The Strategy on Logistics for the Kingdom of Thailand describes the National Logistics Council, which is set up as the responsible body for the implementation and further development of the logistics White Paper, and to act as the chief advisory body to the government. It consists of two parts: a Steering Committee on Logistics Development, chaired by the Prime Minister, and the Logistics Development Council. For the purpose of the implementation and further development of the White paper, six working groups

[21] Following government reorganization, several Ministries have been renamed. The current names are as follows: Ministry of Education, Science and Technology is Ministry of Education; Ministry for Food, Agriculture, Forestry and Fisheries is Ministry of Agriculture, Food and Rural Affairs; Ministry of Foreign Affairs and Trade is Ministry of Foreign Affairs; Ministry of Knowledge Economy is Ministry of Trade, Industry and Energy; Ministry of Labor is Ministry of Employment and Labor; the Minister for Land, Transport and Maritime Affairs is Ministry of Land, Infrastructure and Transport.

[22] Based on “Strategy on Logistics for the Kingdom of Thailand”.

are also formed: logistics infrastructure, legislation, cyber and IT infrastructure, human resources and education, marketing and promotion, and support of SMEs. The Logistics Development Council selects the members of the project groups, steers and evaluates their work against benchmarks and performance indicators, and generally supports their work. The implementation of the recommendations of the working groups is decided on by the Steering Committee on Logistics Development, who also appoints the 40-50 members of the Logistics Council.

The National Logistics Committee described in the Strategy,[23] chaired by the Prime Minister, was established in 2007. It consists of representatives of several ministries, including Commerce, Transport, Industry, Finance, Education, Agriculture, ICT, Labour, and the National Economic and Social Development Board (NESDB). The private sector is represented by several industry associations and federations, such as the Thai National Shippers' Council, Thai Chamber of Commerce, Federation of Thai Industries and Thai Bankers' Association. In addition, seven experts are appointed by the Cabinet. Three sub-committees on industrial logistics development, agricultural logistics development, and data harmonization, work with the Committee.

The Committee is responsible for policy and planning for the logistics sector; measures to promote the logistics industry; following and reporting on the development of logistics; recommending measures on financing, marketing, research, human capacity and tax policy; recommending measures for customer protection; and improving and amending institutional frameworks when necessary. An example of the work of the Committee is the designation of government agencies for the strategic agendas of Thailand's Logistics Development Strategy (2007-2011), which enhances the effectiveness of the Strategy.[24]

[23] The Steering Committee on Logistics Development.
[24] "Thailand's Logistics Development and Supply Chain management towards ASEAN Economic Community", keynote speech by Mr Arkhom Termpittayapaisith, NESDB, 8-9 October 2010.

B. Features of National Logistics Council/Committee

National logistics councils/committees, as described in Section A, have been established in several countries in the region to coordinate and serve as a focal point for policy matters relating to logistics. An important function of the coordinating mechanism is to offer leadership in response to national and international developments influencing the industry. Additionally, the national councils/committees may promote policy consistency and coordination between different stakeholders in the logistics system, and the streamlining of policy development. Other key areas of work for the council/committee may include:

- The development of logistics facilities;
- Measures to promote the development of the logistics industry;
- Initiatives for enhancing the efficiency of the logistics system;
- Development of human capacity in the industry; and
- Marketing and promotion activities to benefit the logistics service providers.

The work of the council/committee is closely connected to the national logistics strategy or master plan, and the wider policy framework, such as economic development plans. It may serve as the monitoring agency for the implementation of the national strategy. In addition, the national strategy may serve as the terms of reference for the council/committee. It is important that the implementation process of its recommendations is clear, and the national logistics strategy offers a natural framework for this.

The council/committee is a fixed body which meets regularly, as opposed to an ad hoc group addressing a particular policy problem. This ensures that there is continuity in policy planning processes and faster reactions to new developments and issues. To enhance the effectiveness of operations, the council/committee may have a formal secretariat, as in the case of the Indonesian National Logistics Team. The secretariat may take responsibility over administrative aspects and follow up to council meetings. This

also ensures that adequate resources are provided to support the council/committee's functions and recommendations.

Various public sector agencies have a stake in the development of logistics policy, such as transport, trade, customs, information and communication, industry, finance and health, in addition to many others. The national logistics council/committee may apply a multiagency approach by including a large number of these stakeholders as members. Additionally, the council/committee may include representatives of the private sector such as national logistics associations, chambers of commerce, and key companies in the field of logistics. The national logistics plan may, as in the case of Malaysia and the Republic of Korea, address the competitiveness of national carriers and public logistics operators. In these cases the relevant companies should also be included in regular consultations with the council/committee. Academics and other experts may also be invited to join, particularly for discussions on matters which require specialized expert knowledge. The membership of the council/committee should also reflect high-level government participation in order to send a strong signal of commitment to the improvement of the industry and increase the credibility of the council/committee, both nationally and internationally. The diverse membership may increase policy consistency and promote a more comprehensive view in policy development. It may also act as a platform for the mediation of conflicts of interest between stakeholders when necessary.

The work of the council/committee may be enhanced by setting up subcommittees or working groups on particular topics. The role of the subcommittees is to work on strategy and plans in more detail, and provide preliminary suggestions and analysis for the discussions. The work of the national logistics council/committee can also be supported by establishing a research institution to provide academic analysis and evidence to support policy making. The role of the logistics council/committee is then to direct the research of the institute, and suggest topics of national interest for their closer study. The establishment of a research institute also supports the general development of skills in the wider industry.

VI. ROLE OF NATIONAL ASSOCIATIONS

The previous chapters described an institutional framework aimed at supporting logistics service providers in the development of the industry in the modern operating environment. In addition to the actions by the government authorities, the national logistics associations can act as a key player in supporting the further development of the industry.

The possibilities to influence policy making for national associations are increased when the association has built a good professional reputation and shown its commitment to dialogue, for example by participating in an active and constructive way to consultations. Measures to maintain professional standards, such as standard trading conditions and codes of conduct, can also help build the reputation of the industry and give the association national and international credibility.

A. Contributor to National Logistics Policy Development

As a major stakeholder, the private sector has a key role in the formulation and implementation of the comprehensive policy framework outlined above. The national logistics association is a natural representative of the industry. Participation in the development of the national logistics strategy ensures that the priorities and challenges faced by the logistics service providers in everyday operations are reflected in the national plans. At the same time, representatives of the industry have a role in ensuring that the measures introduced are the most effective and efficient to encourage and support the industry. The participation of the private sector in a national logistics council/committee may also allow for more efficient policy making, as the private sector can voice concerns and opinions from the very early stages of policy development.

In the cases when several associations exist, they may all be included in the policy framework, either separately or through a cooperative body of associations. Selection of one association as a representative of all logistics service providers may be seen as a

challenge to the fair treatment of all sector players. The mandate of the national associations is primarily to look after the interest of their own members, which may introduce biases in their perspectives on issues. They may also lack sufficient knowledge of all sub-industries to fully consider the implications of policy decisions.

B. Capacity Builder

National associations are well placed to significantly contribute to training and capacity building for the industry, as they can react to emerging needs flexibly and are aware of the most urgent capacity building needs among their members. The association may also act as advisor to its members, particularly relating to regulatory issues. In addition, it may support training activities for the industry, either directly or indirectly.

The association can promote the educational needs of the sector through the national logistics council/committee or directly through the authorities responsible for education. It can work together with universities to support the development of curricula reflecting the needs of the industry.

The association may also deliver training through its own training facilities. While this can be a very convenient way to deliver basic training, the association may face difficulties in creating a sustainable training model. This problem can be eased if the government provides financial and other support as part of the national strategy. Associations can also cooperate with universities to promote training in areas which are most beneficial to the industry. As logistics services become more international, it becomes increasingly important that training is standardized and recognized by foreign partners. This contributes to effective and efficient communication between service providers. The mutual recognition of training may promote the movement of experts internationally and fill in gaps in know-how through foreign workers.

C. Developer of Industry Standards

It is important that the industry standards and codes, such as standard trading conditions, are reviewed on a regular basis to ensure that they are still applicable. The association may enhance standard trading conditions by including more roles and descriptions of responsibilities and by responding to international practices and the needs of the industry. The association may also develop guidelines relating to best practices in contract negotiations, service delivery, agreements with subcontractors, liability insurance and other topics of interest.

The association may review the minimum standards imposed on new members to ensure that they reflect current market conditions. However, it may not be necessary to impose excessive restrictions on companies seeking membership, as the market is generally competitive enough to ensure that complex services are offered only by competent and well-established companies.

ANNEX I. SERVICES COVERED BY DIFFERENT DEFINITIONS OF LOGISTICS

Document	Organization	Scope of sector	Described services	Service ID 1	Service ID 2	Service ID 3
Managing the request-offer negotiations under the GATS: Logistics services	UNCTAD	"Logistics can be defined as the management of global supply chains. The services provided by logistics companies include: management of customs procedures, setting up of assembly and manufacturing plants; groupage; warehousing; information logistics services; and transportation with a selection of carriers and negotiation of tariffs. Some value-added services include management of warranty support programmes, return and repair as well as global logistics services."	Management of customs procedures	Customs and other formalities	x	x
			Setting up of assembly and manufacturing plants	Assembly	x	x
			Groupage	Consolidation	Handling	x
			Warehousing	Warehouse	x	x
			Information logistics services	Information services	x	x
			Transportation with a selection of carriers	Carriage	Selection of carriers	Negotiation of tariffs
			Management of warranty support programmes	Customer service	Value added service	x
			Return and repair	Customer service	Repair	Value added service
			International services	Value added services	x	x
		"3PL firms specialize in integrated logistics services. They address the logistics needs of their clients by integrating transportation, warehousing, inventory control, order processing, customs brokerage and other logistics activities in a comprehensive and seamless supply chain management system. Firms in the 3PL sub-sector provide a designed set of customized logistics services, tailored to the exact needs and specifications of their clients."	Transportation	Carriage	x	x
			Warehousing	Warehouse	x	x
			Inventory control	Inventory	x	x
			Order processing	Order processing	x	x
			Customs brokerage	Customs and other formalities	x	x
			Customized logistics services	Customized logistics services	x	x
			Integration of services	Integration of suppliers	x	x
		"Fourth-party logistics (4PL) goes one step further than 3PL and involves the integration of all companies involved in the supply chain. This guarantees that planning, steering and	Integration of all companies involved in the supply chain	Integration of suppliers	x	x

Document	Organization	Scope of sector	Described services	Service ID 1	Service ID 2	Service ID 3
		controlling of all logistics procedures will be done by a single service provider with a long-term strategic objective."	Planning all logistics procedures	Design of supply chain	x	x
			Steering and controlling of all logistics procedures	Management of supply chain	x	x
Terminology on combined transport	UNECE	Logistics: "The process of designing and managing the supply chain in the wider sense." "The chain can extend from the delivery of supplies for manufacturing, through the management of materials at the plant, delivery to warehouses and distribution centres, sorting, handling, packaging and final distribution to point of consumption."	Delivery of supplies for manufacturing	Delivery (inbound)	x	x
			Management of materials at the plant	Inventory	x	x
			Delivery to warehouses and distribution centres	Delivery (outbound)	x	x
			Sorting	Processing of goods	x	x
			Handling	Handling	x	x
			Packaging	Packaging	x	x
			Final distribution to point of consumption	Distribution	x	x
			Designing the supply chain	Design of supply chain	x	x
			Managing the supply chain	Management of supply chain	x	x
Supply Chain Challenges for National Competitiveness through Transport (Informative document for the 73rd session of the ITC, Agenda item 10(g))	UNECE	Quoting Council of Supply Chain Management Professionals (CSCMP): Logistics is "The process of planning, implementing, and controlling procedures for the efficient and effective transportation and storage of goods including services, and related information from the point of origin to the point of consumption for the requirements. This definition includes inbound, outbound, internal, and external movements." Supply Chain is "1) Starting with unprocessed raw materials and ending with the final customer using the finished goods, the supply chain links many companies together. 2) The material and informational interchanges in the logistical process stretching from acquisition of raw materials to delivery	Planning procedures for transportation	Design of transport operations	x	x
			Implementing, and controlling procedures for transportation	Carriage	Management of transport operations	x
			Planning procedures for storage of goods	Design of warehousing	x	x
			Implementing, and controlling procedures for storage of goods	Warehouse	Management of warehousing	x

Document	Organization	Scope of sector	Described services	Service ID 1	Service ID 2	Service ID 3
		of finished products to the end user. All vendors, service providers and customers are links in the supply chain." "Based on the definitions of supply chains and logistics, the role of logistics can be divided into the transportation and the storage of goods. It consists of the planning, implementation and the control of these tasks."	Planning, implementing, and controlling procedures for related information	Information services	x	x
Constitution of the Singapore Logistics Association	Singapore Logistics Association	"Logistics is defined as the process of planning, implementing and controlling the efficient, cost-effective flow and storage of raw materials, in-process inventory, finished goods and related information from point of origin to point of consumption for the purpose of conforming to customers' requirements."	Planning the flow of raw materials, in-process inventory and finished goods	Design of transport operations	x	x
			Implementing and controlling the flow of raw materials, in-process inventory and finished goods	Carriage	Management of transport operations	x
			Planning the storage of raw materials, in-process inventory and finished goods	Design of warehousing	x	x
			Implementing and controlling the storage of raw materials, in-process inventory and finished goods	Warehouse	Management of warehousing	x
			Flow and storage of related information	Information services	x	x
Basic Logistics Act	Republic of Korea	"Logistics also considered to include "additional value-creating actions" such as processing, assembly, classifying, repairing, packaging, labeling, sales and telecommunications." ""Logistics industry" is divided into 1) Cargo transportation 2) Logistics facility operating business and 3) Logistics service business (which consists of cargo transportation brokerage,	Processing of goods	Processing of goods	Value added service	x
			Assembly	Assembly	Value added service	x
			Classifying	Processing of goods	Value added service	x

Document	Organization	Scope of sector	Described services	Service ID 1	Service ID 2	Service ID 3
		logistics equipment lease, logistics information processing, or logistics consulting).” Third party logistics defined as "consigner delegates all or a part of the logistics activities to a logistics enterprise with which consignor has no special relationship as defined in the presidential decree.”	Repairing	Repair	Value added service	x
			Packaging	Packaging	Value added service	x
			Labeling	Processing of goods	Value added service	x
			Sales	Sales	Value added service	x
			Telecommunications	Track and trace	Value added service	
			Cargo transportation	Carriage	x	x
			Logistics facility operating business	Warehouse	x	x
			Cargo transportation brokerage	Selection of carriers	Negotiation of tariffs	x
			Logistics equipment lease	Equipment	x	x
			Logistics information processing	Information services	x	x
			Logistics consulting	Consulting	x	x
Goods Distribution Promotions Act	Republic of Korea	“Goods distribution business, defined as business run to transport, store, load and unload and pack cargos in return for compensation and various activities related to them to meet the demand of other persons.”	Transport	Carriage	x	x
			Store	Warehouse	x	x
			Load and unload	Handling	x	x
			Packing of cargos	Packing	x	x
Logistics (http://ec.europa.eu/transport/logistics/index_en.htm)	European Commission	“Logistics is the planning, organization, management, execution and control of freight transport operations. It integrates individual transport acts to door-to-door supply chains, determining the efficiency of freight transport.”	Planning of freight transport operations	Design of transport operations	x	x
			Organization, management, execution and control of freight transport operations	Carriage	Management of transport operations	x

Document	Organization	Scope of sector	Described services	Service ID 1	Service ID 2	Service ID 3
			Integration of individual transport acts to door-to-door supply chains	Integration of suppliers	x	x
Logistics Performance Index 2012	World Bank	"Logistics, organizing the movement of goods over time and space, has evolved from its 19th century military roots to today's international supply chains. As the backbone of international trade, logistics encompasses freight transportation, warehousing, border clearance, payment systems, and many other functions."	Freight transportation	Carriage	x	x
			Warehousing	Warehouse	x	x
			Border clearance	Customs and other formalities	x	x
			Payment systems	Payment	x	x
Consultation Document on Logistics for Promoting Freight Intermodality	European Commission	"'Intermodal logistics' concentrates on the transport part of the whole supply chain (i.e. on transport logistics) in favour of intermodal solutions and covers the planning, organization, management, control and execution (implementation) of intermodal freight transport door to door."	Planning of intermodal freight transport door to door	Design of transport operations	x	x
			Organization, management, control and execution (implementation) of intermodal freight transport door to door	Management of transport operations	Integration of suppliers	x
Statistical coverage and economic analysis of the logistics sector in the EU (SEALS)	European Commission	"The freight logistics sector as defined for this study implies all processes, which are needed to supply industry, retail and wholesale and the end customer with goods. - all freight transportation, storage, transshipment, order-picking and other directly connected services, before, after and between production and retail activities in the economy; - all inventory maintenance activities in the economic value-creation chains including sector-typical inventory write-offs for the reporting period of an imputed rate of interest; - the order processing activities of the logistical transactions, and - the related supply chain planning, management and related administrative activities."	Freight transportation	Carriage	x	x
			Storage	Warehouse	x	x
			Transshipment	Handling	x	x
			Order-picking	Order processing	x	x
			Inventory maintenance activities	Inventory	x	x
			Order processing activities of the logistical transactions	Order processing	x	x

Document	Organization	Scope of sector	Described services	Service ID 1	Service ID 2	Service ID 3
			Related supply chain planning activities	Design of supply chain	x	x
			Related supply chain management and related administrative activities	Management of supply chain	x	x
Freight Transport Logistics in Europe – the key to sustainable mobility	European Commission	"'Freight Transport Logistics' covers the planning, organization, management, control and execution of freight transport operations in the supply chain."	Planning of freight transport operations in the supply chain	Design of transport operations	x	x
			Organization, management, control and execution of freight transport operations in the supply chain	Carriage	Management of transport operations	x
Study on Freight Integrators	European Commission	"Freight integrators are transport service providers who arrange full load, door-to-door transportation by selecting and combining without prejudice the most sustainable and efficient mode(s) of transportation." "10 indicators for the identification of Freight Integrators were identified: 1. Specialisation on full loads 2. Relevant market participation in the field of intermodal transports 3. Intermodal transports as a relevant business field within the	Choice and combination of transport modes	Selection of carriers	x	x
			Preparation of the shipment with all necessary documents	Customs and other formalities	x	x
			Surveillance of the accomplishment of the transport	Carriage	Management of transport operations	x

Document	Organization	Scope of sector	Described services	Service ID 1	Service ID 2	Service ID 3
		company 4. Commitment to intermodality 5. Knowledge and experience 6. Supporting the idea of environmental sustainability 7. Economic substantiation of intermodality 8. Customer relationships 9. Co-operations and partners 10. Geographic spread as a EU-wide business" "Whilst engaging in a transport movement the Freight Integrator's tasks go further than just organising or planning. He literally has to arrange all necessary parts that are associated with a shipment. This includes the right choice and combination of transport modes, the preparation of the shipment itself with all necessary documents and the surveillance of the accomplishment of the transport itself." "The Freight Integrator does not have to do all this by himself, he can be seen more as a manager and takes responsibility for anything in conjunction with the shipment."	Manager of the shipment	Management of transport operations	x	x
Freight Transport Logistics Action Plan	European Commission	"Freight Transport Logistics focuses on the planning, organization, management, control and execution of freight transport operations in the supply chain."	Planning, organization, management, control and execution of freight transport operations in the supply chain	Design of transport operations	x	x
			Organization, management, control and execution of freight transport operations in the supply chain	Carriage	Management of transport operations	x

Document	Organization	Scope of sector	Described services	Service ID 1	Service ID 2	Service ID 3
Freight Transport Logistics Action Plan Impact Assessment	European Commission	"Logistics includes the process of planning, implementing and controlling the movement of raw materials, half-finished products and finished goods." "Firstly, logistics activity is required whenever production is distributed in space. The process of decomposing the production process and organising the work flows world-wide has been accelerated by the political changes in the early Nineties. Since then, industrial exchange and trade have grown at an unprecedented speed, relying on logistics activity to construct international supply chains. Secondly, the logistics sector is increasingly taking over parts of production and servicing activities in just-in-time or just-in-sequence processes. This includes simple sorting activities as well as high-tech assemblies prior to delivery to the final product assembly. Third or fourth party logistics (3PL or 4PL) providers specialise in the analysis of work flows and the development of more efficient, distributed production schemes."	Process of planning movement of raw materials, half-finished products and finished goods	Design of transport operations	x	x
			Process of implementing and controlling the movement of raw materials, half-finished products and finished goods	Carriage	Management of transport operations	x
			Taking over parts of production and servicing activities in just-in-time or just-in-sequence processes	Assembly	x	x
			Simple sorting activities	Processing of goods	x	x
			High-tech assemblies prior to delivery to the final product assembly	Assembly	x	x
			Analysis and development of production schemes	Consulting	x	x
To What Extent Are High-Quality Logistics Services Trade Facilitating? OECD Trade Policy Papers	OECD	"For the purposes of this study, trade logistics is defined to include the range of services and processes that are involved in moving goods from one country to another. It includes customs and administrative procedures, organization and management of international shipment operations, tracking and tracing, and the quality of transport and information technology infrastructure. Only logistics services that are directly related to international trade and the transport of goods from one economy to another are covered; the analysis does not pertain, for example, to logistics that are directly related to end-user distribution subsequent to goods' arrival in the destination country."	Customs and administrative procedures	Customs and other formalities	x	x
			Organization and management of international shipment operations	Carriage	Management of transport operations	x
			Tracking and tracing	Track and trace	x	x
			Information technology infrastructure	Information services	x	x
			Quality of transport	Management of transport operations	x	x

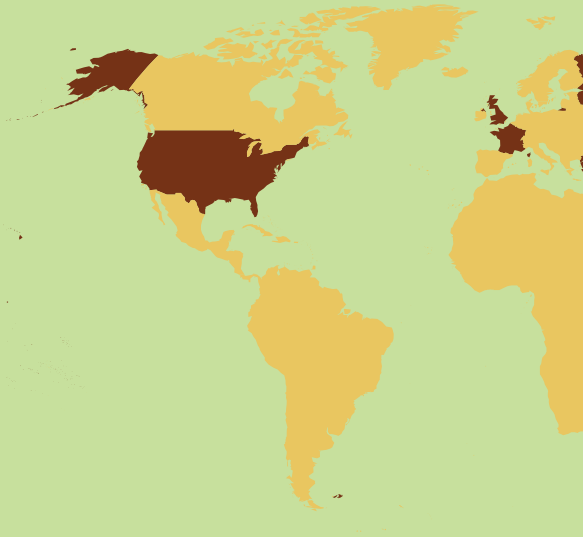
ANNEX II. SERVICE ID DESCRIPTIONS

Service ID	Included descriptions
Assembly	Setting up of assembly and manufacturing plants
	Assembly
	Taking over parts of production and servicing activities in just-in-time or just-in-sequence processes
	High-tech assemblies prior to delivery to the final product assembly
Carriage	Transportation with a selection of carriers
	Transportation
	Implementing, and controlling procedures for transportation
	Implementing and controlling the flow of raw materials, in-process inventory and finished goods
	Cargo transportation
	Organization, management, execution and control of freight transport operations
	Freight transportation
	Organization, management, control and execution of freight transport operations in the supply chain
	Surveillance of the accomplishment of the transport
	Organization, management, control and execution of freight transport operations in the supply chain
	Process of implementing and controlling the movement of raw materials, half-finished products and finished goods
	Organization and management of international shipment operations
Consolidation	Groupage
Consulting	Logistics consulting
	Analysis and development of production schemes
Customer service	Management of warranty support programmes
	Return and repair
Customized logistics services	Customized logistics services
Customs and other formalities	Management of customs procedures
	Customs brokerage
	Border clearance
	Preparation of the shipment with all necessary documents
	Customs and administrative procedures
Delivery (inbound)	Delivery of supplies for manufacturing
Delivery (outbound)	Delivery to warehouses and distribution centres

Service ID	Included descriptions
Design of supply chain	Planning all logistics procedures
	Designing the supply chain
	Related supply chain planning activities
Design of transport operations	Planning procedures for transportation
	Planning the flow of raw materials, in-process inventory and finished goods
	Planning of freight transport operations
	Planning of freight transport operations in the supply chain
	Planning, organization, management, control and execution of freight transport operations in the supply chain
	Process of planning movement of raw materials, half-finished products and finished goods
Design of warehousing	Planning procedures for storage of goods
	Planning the storage of raw materials, in-process inventory and finished goods
	Planning of intermodal freight transport door to door
Distribution	Final distribution to point of consumption
Equipment	Logistics equipment lease
Handling	Groupage
	Handling
	Load and unload
	Transshipment
Information services	Information logistics services
	Planning, implementing, and controlling procedures for related information
	Flow and storage of related information
	Logistics information processing
	Information technology infrastructure
Integration of suppliers	Integration of services
	Integration of all companies involved in the supply chain
	Integration of individual transport acts to door-to-door supply chains
	Organization, management, control and execution (implementation) of intermodal freight transport door to door
Inventory	Inventory control
	Management of materials at the plant
	Inventory maintenance activities

Service ID	Included descriptions
Management of supply chain	Steering and controlling of all logistics procedures
	Managing the supply chain
	Related supply chain management and related administrative activities
Management of transport operations	Implementing, and controlling procedures for transportation
	Implementing and controlling the flow of raw materials, in-process inventory and finished goods
	Organization, management, execution and control of freight transport operations
	Organization, management, control and execution (implementation) of intermodal freight transport door to door
	Organization, management, control and execution of freight transport operations in the supply chain
	Surveillance of the accomplishment of the transport
	Manager of the shipment
	Organization, management, control and execution of freight transport operations in the supply chain
	Process of implementing and controlling the movement of raw materials, half-finished products and finished goods
	Organization and management of international shipment operations
	Quality of transport
Management of warehousing	Implementing, and controlling procedures for storage of goods
	Implementing and controlling the storage of raw materials, in-process inventory and finished goods
Negotiation of tariffs	Transportation with a selection of carriers
	Cargo transportation brokerage
Order processing	Order processing
	Order-picking
	Order processing activities of the logistical transactions
Packaging	Packaging
Packing	Packing of cargos
Payment	Payment systems
Processing of goods	Sorting
	Processing
	Classifying
	Labeling
	Simple sorting activities

Service ID	Included descriptions
Repair	Return and repair
	Repairing
Sales	Sales
Selection of (multiple) carriers	Transportation with a selection of carriers
	Cargo transportation brokerage
	Choice and combination of transport modes
Track and trace	Telecommunications
	Tracking and tracing
Value added service	Management of warranty support programmes
	Return and repair
	Processing
	Assembly
	Classifying
	Repairing
	Packaging
	Labeling
	Sales
	Telecommunications
	International services
Warehouse	Warehousing
	Implementing, and controlling procedures for storage of goods
	Implementing and controlling the storage of raw materials, in-process inventory and finished goods
	Logistics facility operating business
	Store
	Storage



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