VI. GUIDELINES FOR DEVELOPING LOGISTICS CENTRES IN PORTS

The preceding sections have identified trends in logistics and a range of practices, in several ports not only in the ESCAP region but also in other parts of the world. Taken together, these findings provide some guidelines, which might be helpful for other ports in the ESCAP region in order to draw upon the experiences of a few of successfully restructured ports. The guidelines listed below are not intended to be prescriptive models for all ports to follow. Rather, they are intended to serve as a helpful resource which other ports in the ESCAP region may follow, if they would so choose.

- Effective Planning and Development of Logistics Centres
- Institutional Incentive Scheme
- Development of Free Trade Zones
- Financing Infrastructure Related to Logistics Centres
- Developing 3PL Service Providers and Logistics Professionals
- Development of Information Technology
- Regulatory and Administrative Issues

A. Effective planning and development of logistics centres

Objective: To utilize a system-oriented approach for planning and developing ports, associated logistics centres, and city functions.

Collaboration between the port and logistics centres is crucial for the success of port. However, in the past, the planning and development of port and logistics centres has been approached in an isolated manner. The problem basically boils down to an insufficient understanding of logistics centres in regional ports and a lack of integrated planning. There is a need for a systems-oriented approach to planning and developing ports, associated logistics centres in port areas, and city functions to meet the demands of shippers, port users, and citizens.

Action 1: Ports should, in advance, prevent the use of land space behind them for random development or without regard to port-related functions.

One of the reasons why the lack of logistics centre has become a salient issue in the ESCAP region is because governments have not adequately understood the importance of sufficient land space for developing logistics centres. That is, the general practice in developing ports in the past have given little consideration by port authorities to securing sufficient land space for the development of logistics centres. Consequently, the shortage of land space has led to difficulties in building logistics centres at most city ports in the ESCAP region. Ports should place a high priority, in advance, on preventing the land space behind them from being used for random developments or from being used without regard to the original port and port-related functions.

Legislative measures should to be taken to control port land extending beyond the boundaries of the port. Otherwise, ports will continue to be beset by problems of competing land uses through out its life. Even if port authorities set up a long-term plan, their time and
GUIDELINES FOR DEVELOPING LOGISTICS CENTRES IN PORTS

... efforts would fail, if they are unable to maintain the consistent control of land necessary to execute that plan. Therefore, it is desirable for a port to control all its land resources.

Even with full control of land-use, ineffective management practices can cause problems. Examples of such problems include the granting of contracts to use port land for purposes which extend far beyond the economic life of the activity and afterwards become an embarrassment and a frustration to the port\(^\text{17}\).

This example indicates that all port contracts for land should be drawn up to cover use, level of activity and time duration. Therefore land use management policies must aim at:

- retaining operational land in operational use;
- retaining maritime industrial land at an appropriate level of industrial use;
- ensuring that full economic use is made of occupied areas;
- making it possible to recover land from obsolescent and obsolete uses for redevelopment; and
- phasing contracts as closely as possible to the life of the activity.

Measures to provide for the use of dredged land areas or other land provision matters can make a useful contribution to building logistics centres in ports. An example of a best practice in the development of logistics centres can be found in the Port of Rotterdam, which has succeeded in transforming the barren land along the port area into sophisticated and highly successful composite logistics centres.

In Rotterdam, the first logistics centres were established in old port basins, next to the existing container terminals in the Eemhaven Region. Construction of the Botlek Distriparks followed. In the 1980s, as the container trade started to grow substantially, the Port of Rotterdam redeveloped Maasvlakte, a large port basin originally developed in the late 1960s but remained empty because of stagnation.

**Action 2: Measures should be taken to integrate the objectives of city development into logistics development policies especially with regard to improving the harmony between city functions and port functions including logistics centres.**

Activities in logistics centres may cause a number of problems, including water and soil pollution, dust pollution, land intrusion, traffic congestion and other problems inherent to port activities. Although the resulting social costs are impossible to quantify, they still remain a substantial burden to the supporting city. Consequently, reflecting the logistics centre development into the city development plans is a vital component of integrating city development objectives into logistics development policies, especially with regard to improving the harmony between city functions and port functions.

\(^{17}\) Suppose a case that port grants a 50 years contract of site in port areas for the use of conventional industrial activity. Twenty years after the contract was granted, that industrial activity may cease to be viable. Nevertheless, the port may be denied economic port use of the area for a further 30 years if the contract contains no clause to cover this eventuality.
In this regard, for the development of logistics centres in port areas, more attention must be paid to the development of city-related functions, international conventions and other related facilities as well. In turn, building convention centres or trade related facilities would provide new sources of commercial impact for the port industry in the ESCAP region.

Summing up, strengthening city-functions and creating an internationally competitive urban setting in conjunction with logistics centre development will attract major service and trade related activities to the port region. The Port of Yokohama in Japan is an example of success in redeveloping an older port area, a site where conventional berths used to be, has been replaced with a complex of urban and logistics area with composite facilities including hotels, offices, department stores, and logistics centres. The Port of Yokohama succeeded because of its use of sophisticated plans and effective connections with the city development, its early retrieval of development expenses through land sales, and direct supervision of the marketing of logistics facilities by top management of the port and city authorities. Therefore, actions for planning and developing logistics centres should include effective harmonization with city development plans, functions and facilities.

**Action 3: Regional ports should approach partnership and conduct in-depth research in planning and developing the logistics centres in port areas to prepare for future requirements, to avoid possible conflicts among all parties involved in the development, and to promote integrated and rapid development.**

Planning and developing the logistics centres in ports involves parties at all decision-making levels: the central government, local governments, port authorities, shippers, the logistics companies, and so on. In this regard, coordination and cooperation are essential among them to promote integrated and rapid development. In order to achieve such integration, the public authorities (including governments and the planning agencies) and the users should form a “task force” or “partnership.” Furthermore, in-depth research should be conducted in planning and developing the logistics centres in port areas to prepare for future requirements.

A legal framework enshrining the principles of consultation and compromise should be set up to institutionalize a processor public participation process. In such cases, it is mandatory for port authorities/agencies in charge of developing logistics centres to document their proposals, and the expected impacts of the proposals. In the course of documenting their proposals for public consideration, some alternatives may be offered to gain community acceptance. Ports, which involve the public in their planning and development stages of logistics centres, generally succeed in having their vision as commercial logistics centres realized.

The need for this partnership approach is nowhere more evident than at the close interconnection between land transport and logistics centre. Since it is essential for ports and logistics centres to have easy access to inland transport and close inter-connection between them to perform their functions properly, providing or improving rail and local road access into logistics centres should be one of the highest items on the agenda for ports in the ESCAP region. To achieve an efficient, seamless transport and distribution system, the Integrated Transport Strategy of the Sydney Ports Corporation demonstrates that land transport is of no less importance than adequate port facilities and services (Hayes, 2002). Consequently, co-
ordination is required among ports, rail operators and local authorities with strong assistance from the government with regard to land, roads, railways, and energy. The cooperation that exists between all parties concerned at the Japanese ports to develop ports and logistics centres (Free Access Zones) may serve as a good guideline for developing ports in the ESCAP region.

B. Institutional incentive schemes

Objective: To provide MNCs and international logistics service providers with institutional incentive schemes such as tax incentives and other supporting schemes to establish their logistics centres in ports.

Developing logistics centres requires a long construction period and large investments. Considering the examples from successful ports, tax incentives and other supporting schemes are essential for developing the logistics centres. Ports and relevant government agencies should accordingly support the MNCs and international logistics service providers through tax incentives and other schemes to attract their operations in their port regions.

Action 1: Ports should provide a variety of incentives, such as pioneer status, preferential taxation, loan guarantees, credit insurance, low-interest financing and bonded services in the development of logistics centres.

Table VI.1 shows the various tax and other incentives used to support logistics centre investors in selected economies in the ESCAP region.

Table VI.1. Tax favors and incentives for the logistics centre behind port in selected economies in the ESCAP region

<table>
<thead>
<tr>
<th>Country</th>
<th>Tax and incentives for the construction of logistics centre in ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>15% of tax on juridical persons levied. If a firm operates D.C. more than 10 years, tax on juridical persons will be exempted for a specified period of time. When the specified period expires, 50% of tax will be exempted.</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>16% of tax on juridical persons and 15% of property tax levied. No tax on interest income, dividend income etc.</td>
</tr>
<tr>
<td>Taiwan Province</td>
<td>In Export Processing Areas, import tax, commodity tax and trade tax will be exempted. In Science Industrial Areas, tax on juridical persons will be exempted for 4 years when a firm increases its facilities.</td>
</tr>
<tr>
<td>Japan</td>
<td>35% of tax on juridical persons and total tax on permanent asset will be exempted for firms that employ more than 20 workers for 5 years.</td>
</tr>
<tr>
<td>Singapore</td>
<td>Economic Development Board and Trade Development Board provide various incentives. 10% of tax on juridical persons levied. Over depreciation system adopted.</td>
</tr>
</tbody>
</table>

An example of some best practices in embarking on an active campaign to encourage MNCs and a number of international logistics service providers to establish their logistics centres can be garnered from the Port of Singapore, which has succeeded in transforming the city-state into a logistics hub for the region through various incentive schemes such as pioneer status, tax exemptions, and so on.
Japanese ports also provide examples of a variety of incentives, including preferential taxation, loan guarantees, credit insurance, low-interest financing and bonded services in the development of logistics centres (FAZ). Table VI.2 shows detailed incentive schemes in Foreign Access Zone provided by Kobe city and the Japanese government. Further examples from other successful countries make it clear that tax and other incentives are essential for efficient logistics centre construction.

Table VI.2. Incentives for Kobe FAZ

<table>
<thead>
<tr>
<th>Classification</th>
<th>Authority</th>
<th>System</th>
<th>Targeted Businesses</th>
<th>Conditions</th>
<th>Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central</td>
<td>Special depreciation allowance on machinery and building</td>
<td>Transportation Manufacturing Wholesale Retail Packing</td>
<td>Periods: February 19, 1997-March 31 2002 Condition: When acquiring assets subject to depreciation such as machinery and building. Limited Amount = Regular depreciation Amount + Special depreciation Amount (Building 10%, Machinery 22%)</td>
<td>February 19, 1997-March 31 2002</td>
</tr>
<tr>
<td></td>
<td>Prefecture</td>
<td>Real estate acquisition tax on a differential basis</td>
<td>Import Cargo Distribution Promotion Set Up Facilitator</td>
<td>Period: February 19, 1997-February 19, 2002 Condition: (1) Facilities acquired at a cost of 300 million yen or more and used by the business(es) for sorting, storage purposes etc. Applies to facilities which are newly built or expanded on or after April 1, 2000. (2) When establishing exhibition or conference facilities for unspecified users. Tax Rate: Regular 4% to 2%</td>
<td>February 19, 1997-February 19, 2002</td>
</tr>
<tr>
<td></td>
<td>City/Town/Village</td>
<td>Fixed assets tax on a differential basis</td>
<td>Import Cargo Distribution Promotion Set Up Facilitator</td>
<td>Period: February 19, 1997-February 19, 2002 Condition: (1) Facilities acquired at a cost of 300 million yen or more, and used by the business(es) for sorting, storage purposes etc. Applies to facilities which are newly built or expanded on or after April 1, 2000. (2) When establishing exhibition or conference facilities for unspecified users. Tax Rate: Regular 1.4% to lst year 0.7%, 2nd year 1.05%, 3rd year 1.225%</td>
<td>February 19, 1997-February 19, 2002</td>
</tr>
<tr>
<td></td>
<td>Funds</td>
<td>Loan guarantee for the Industrial Structure Improvement Fund</td>
<td>Transportation Manufacturing Wholesale Retail</td>
<td>Period: February 19, 1997-March 31, 2002 Condition: When acquiring property for import cargo processing, sorting or storage facilities new buildings or remodeling.</td>
<td>February 19, 1997-March 31, 2002</td>
</tr>
<tr>
<td></td>
<td>Financing Corporation/Council</td>
<td>Special examples of small to mid-size company credit insurance</td>
<td>Transportation Manufacturing Wholesale Retail</td>
<td>Credit guarantee council rate 80% (Regular 70%) Insurance rate of small to mid-size company credit insurance financing corporation: Draft discount (0.25%), No collateral (0.29%)</td>
<td></td>
</tr>
</tbody>
</table>
2. Government Financing Agency with Low Interest Loans

<table>
<thead>
<tr>
<th>Agency Name</th>
<th>System</th>
<th>Eligible Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Bank of Japan</td>
<td>“Financing Programme for Import Facilities Enhancement”</td>
<td>Prepare equipment and facilities for foreign companies to establish a sales office in Japan or for Japanese companies to expand their import products. *Expenses such as rental fees and damage insurance premiums are also applicable for new foreign businesses.</td>
</tr>
<tr>
<td>Small Business Finance Cooperation</td>
<td>Low Interest Loan</td>
<td>Direct construction expense of specified facilities by civil law. (Maximum 50%)</td>
</tr>
<tr>
<td>Small Business Finance Cooperation</td>
<td>“Loans to Facilitate Import Sales”</td>
<td>Necessary equipment capital and operation capital to expand import product sales for small to mid-size retail and wholesale companies. The amount available for low interest loans will be increased for import wholesalers and retail businesses based in or conducting business in the FAZ.</td>
</tr>
</tbody>
</table>

Source: Port of Kobe.

**Action 2: Port authorities or relevant government agencies should try to accept delayed financial returns when providing land for logistics centres, in order to attract investment of MNCs and international logistics companies in their port regions.**

Whether major logistics firms or manufacturing companies are willing to invest will depend on the price of land provided by the ports. While the government or ports will try to provide the land at a fair value, MNCs and logistics companies will try to lower the value to a level where they can assure making reasonable returns, thereby resulting in a conflict between the two parties. As such, attracting investors will depend on the degree to which the ports can accept delayed returns, and how much investors are willing to pay for the land or buildings.

Some ports in the ESCAP region, especially Japan, Singapore, Hong Kong, Chinese Taipei and Korea, still have many problems with regard to high land prices or rental fees for the port logistics centres. Since the emergence of VAL services at ports, some economies in the region have started to develop vast areas of land for logistics centres in port areas. But the costs of development are still too expensive for multinationals or logistics firms to locate in the region.

A measure to provide land at affordable prices by exploiting intensive utilization of land by constructing high rise building can be an option as in the case of Hong Kong. See box VI.1. Another measure for the ESCAP economies to induce as many multinational firms and logistics companies as possible to the port areas is that the government and port authorities should lower land related costs in developing the vast land areas. Although lowering the cost of land will likely mean much slower returns on investment, cheaper land costs could help to differentiate the port from other emerging competitors by attracting more investors into the logistics centre. Subsequent growth in port region’s employment and tax revenues will be expected.
Box VI.1. ATL Logistics Centre Hong Kong Ltd.

Logistics Centre is the world’s first and largest intelligent multi-storey drive-in cargo logistics centre designed for fast turnaround of cargo. Conveniently located in the heart of Kwai Chung Container Terminals and within near reach of Hong Kong’s commercial and population centres, airport, as well as the Mainland border, the Centre offers warehouse and leasing as well as a full range of cargo handling, a container freight station (CFS) and distribution services.

ATL Logistics Centre is comprised of 7 floors at Centre A and 13 floors at Centre B providing over 9.3 million square feet total floor area and over 6 million square feet leasable area to CFS, Logistics, Air-freight and all kind of business operators under one single roof.

It has 3 lane ramp (2 lanes up and I lane down) for vehicular access and its traffic throughput is average 8,000 vehicles a day.

C. Development of free trade zones

Objective: To establish Free Trade Zones as part of wider port policies aimed at inducing port traffic and producing value-added services by attracting logistics centres of MNCs and international logistics companies, thereby increasing employment and tax revenues in the local economy.

In order to lead global logistics within their respective regions, logistics centres in the Netherlands, Singapore, and Hong Kong have consistently expanded their logistics facilities such as ports and airports. Using such facilities as a base, they have actively established FTZs as part of their efforts to consolidate and centralize logistics management. These ports, each of which is a major regional logistics centre, have become favorite locations for global firms. Assistance given to the Japanese ports for building ports and logistics centres (FAZs) may serve as a good institutional guideline for the developing FTZs in ports of the ESCAP region.
**Action 1: In order for the FTZs to function effectively, ports and relevant government agencies should eliminate or reduce the unintended costs or obstacles associated with tax and trade laws.**

A FTZ has long been considered as a way to contribute to the efficiency of international trade and logistics services. Furthermore, a FTZ has long been a part of wider policies aimed at attracting port traffic and producing value-added services by attracting logistics centres, thereby increasing employment and revenue in the local economy. The setting up of FTZs to facilitate entrepot trade in dutiable and quota-restricted goods contributed to today’s success of Singapore as a logistics and business centre in Southeast Asia.

There are currently 845 free trade zones that offer comprehensive logistics and production capabilities (UNCTAD, 1999). There is, however, no uniform pattern for a free trade zone in the world. Rules governing the zone vary greatly from one country to another. Singapore and Hong Kong have a long history of free trade zones in ports. Japan and Chinese Taipei have already established FTZs in several ports and developed logistics centres in the zones. China has actively developed logistics centres through large-scale foreign capital injection beginning in the early 1990’s, adopting a free trade zone system to ensure the free trade of global firms. Recently developed Port of Tanjung Pelepas in Malaysia is aggressively developing FTZ for distribution, logistics and industry to cater to increased traffic.

A notable exception is in the Netherlands’ distribution parks, which are not FTZs. However, each company within them can be considered as a free zone, or a “free point,” in and of itself. In the Netherlands, there are approximately 1,500 of these free points. The Distriparks can offer freer facilities than a free port. When a company fulfills certain conditions with respect to security, and when it has established an on-line computer connection meeting certain standards with Customs, it may obtain a license from the customs permitting it to carry out certain basic customs formalities by itself. Such a system makes the goods flow faster and more efficiently.

Summing up, FTZs are intended to promote host country’s participation in trade and commerce by eliminating or reducing the unintended costs or obstacles associated with host country’s trade laws. Of course, this is not an easy task or one that could be accomplished in a short period of time. Therefore, legal and institutional procedures should be arranged in a continuous and integrated way.

**D. Financing infrastructure related to logistics centres**

**Objective: To make the best possible use of limited funds and to maximize the effectiveness of the respective roles of all parties concerned.**

Financing the development of logistics centre in port regions poses a number of major problems. Since the volume of port traffic in the ESCAP region will continue to grow for many years to come, the ports must make massive and sustained capital investments to meet the demand.
In addition, a particular consideration should be given to the additional investments required to replace existing older and deteriorating infrastructure in many of this region’s ports. The physical conditions of existing port facilities are several decades old and will be unable to meet the minimum standard that will be required of port services in the future. Furthermore, the life cycle of most existing port facilities will come to an end, thus compounding the burden of cargo handling and traffic movement. Consequently, future investment will need to be made not only in new port facilities, but also in replacing older ones. Furthermore, considering the huge demand for financial resources for the development of the Chinese port sector, fierce competition will arise for financial resources with those of other economies. These facts will certainly have a great effect on the capabilities of infrastructure financing in the ESCAP region.

**Action 1: High priority should be placed on financing infrastructure including port facilities and related logistics centres to meet the growing demand for logistics activities.**

The above mentioned facts imply that ports and logistics facilities have to put more emphasis on financing infrastructure including port facilities and related logistics centres. In many cases, however, the central and local governments in the ESCAP region do not have the proper funds to develop even basic port facilities. Consequently, at present, they do not place high priority on developing logistics centres in port areas.

The need to make the best possible use of limited funds will require that every effort from all parties concerned should be made to maximize the effectiveness of their respective roles. This clearly implies that the public sector’s investments are intended to support the infrastructure only, whereas private investors provide the superstructures in most cases.

Furthermore, progress towards the privatization of the port and related facilities has to be continued. This will bring greater operational efficiency, reduced labour costs and less bureaucracy through the invisible power of free enterprise. But before promoting participation of the private sector, a clear and systematic framework for regulation and supervision has to be established to restrict monopolistic and unfair practices that might be exercised by the private sector.

**Action 2: Measures should be taken for better utilization of existing facilities and innovative approaches to financing relevant infrastructure of logistics centres.**

To overcome severely limited financial capacity in the region’s logistics centres in ports, the following measures should be taken. First of all, careful planning and sound investment will be needed to avoid over-capacity and unprofitable operations while assuring continuous growth. Also, to overcome the chronic shortage of facilities, new approaches to financing infrastructure have to be adopted. The most significant may be the strengthening of private sector participation in the development of logistics centres. Already, the range of private sector participation is very wide, from straight-forward BOT (build-operate-transfer) to the extreme case of complete privatization with no government involvement. History shows that the private participation in the development of logistics centres has led to greater efficiency and reduced lead times for development. However, in many cases including the Republic of Korea, protracted negotiations over the terms of BOT developments have actually delayed the development of the logistics centres and related infrastructure. In order
to induce private capital for the development of logistics centres, ports in the region will have to provide more favourable institutional, regulatory and administrative environments in a timely manner, and share the risks in the approach.

E. Developing 3PL service providers and logistics professionals

Objective: To improve the quality of logistics service providers, and to develop a solid workforce of logistics professionals.

In many cases, policymaking in the logistics sector has focussed on ‘hard’ factors instead of ‘soft’ factors. Particularly, the ESCAP region has hardly paid attention to ‘soft’ factors such as policy to develop professionalism and manpower in the logistics industry. These soft factors became important during the late 1990s. To do business in foreign markets, MNCs need the capacity to handle a variety of factors, including the new and uncontrollable economic environment, laws and systems, social and cultural values and behavioral standards, the structure of the market, as well as desired service levels and the quality of usable information. Thus, in order to meet the demand of these global firms, there is an urgent need to improve the quality of logistics service providers, and to develop a solid workforce of logistics professionals. Both of these things have contributed to the Netherlands’ and Singapore’s status as the hubs of Europe and Asia, respectively.

Action 1: Professional logistics services should be promoted by attracting global 3PL providers for new logistics centres in ports.

In response to lean production and distribution systems, the trend towards outsourcing of logistics services continues. The specialized service providers, so-called third-party logistics (3PL) service providers, offer global firms many advantages, including reducing the need for capital investment, reducing working capital needs, and enabling penetration into new markets more quickly and with less capital.

Consequently, the demand for stability, consistency, and flexibility has led to an increasing use of 3PL in almost every aspect of logistics activities. In the EU, 3PL accounted for 65 per cent of logistics services in 1997. In the US, the use of 3PL has soared since the mid-90’s, accounting for over 50 per cent of logistics.

Table VI.3 shows how 3PLs function as full-service providers, thus ensuring that all services required by customers can be met cost effectively. 3PL service providers in the Netherlands and Singapore offer a wide range of services that complement the specific needs and capabilities of global firms. The quality of 3PL’s services is considered to be an important factor in attracting new logistics centres in their countries. In line with this trend, ports in the ESCAP region must attract and develop word-class providers of customized logistics services in order to attract global firms to set up their logistics centres in the region.

In regards to the 3PL industry, efforts will have to be made to identify those companies, which have the highest potential for operating logistics centres and also to promote the 3PL industry at the local level. Given the reality that most ESCAP economies
lack a professional 3PL industry, the future success of logistics centres depends critically on the promotion of the 3PL industry.

### Table VI.3. Range of services offered by 3PL providers

<table>
<thead>
<tr>
<th>Classical</th>
<th>Advanced Services</th>
<th>Full Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warehouse management</td>
<td>Pick and pack</td>
<td>Order processing</td>
</tr>
<tr>
<td>Transportation</td>
<td>Assembly/packaging</td>
<td>Order planning</td>
</tr>
<tr>
<td>Dispatch</td>
<td>Returns</td>
<td>System/IT</td>
</tr>
<tr>
<td>Delivery documentation</td>
<td>Labeling: <em>price and bar code</em></td>
<td>Invoicing</td>
</tr>
<tr>
<td>Customs documentation</td>
<td>Stock account</td>
<td>Payment collection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Logistics consulting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shipment tracking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Materials planning</td>
</tr>
</tbody>
</table>


**Action 2: An effective education and training programme must be prepared to produce not only logistics specialists equipped with SCM, IT and strong language capabilities, but also technologically trained and skilled work force.**

Every port in the world is putting forth great efforts to build its information infrastructure and train personnel for a knowledge-based economy. Just as knowledge enterprises are recognized as the best firms, only those ports that are armed with knowledge will be able to maintain their status as competitive ports. Ports in the ESCAP region will only be able to achieve their goal of becoming logistics centres if they direct adequate resources toward training logistics professionals and skilled work forces at the most advanced level.

An effective programme must produce logistics specialists that not only have strong language capabilities and the ability to work effectively with information technology, but also a solid foundation in all aspects of the supply chain, including warehouse management, inventory management, customer service, transport, purchasing, budgeting, accounting, and forecasting.

Skilled personnel is also a necessity, as evidenced by the growing gap between the supply of and demand for technologically competent labour forces in logistics services. Technologically trained workforces in ports and logistics centres are increasingly in short supply. However, the current system of workforce training is simply incapable of producing the specialized workers needed to meet the requirements of highly specialized logistics centre operations.

In the Netherlands, a large government initiative had started in the mid-1990s in developing specialized knowledge related to the logistics sector as a whole. This government initiative to transfer new knowledge to the Dutch logistics sector is designed to increase its competitive advantage. This is done by means of two knowledge centres: one for transportation
research, aimed at the transport-industry called Connekt, and one for chain-management, aimed at shippers, called KLICT. Another notable example of an effort to support growing manpower needs in the logistics sector is AFT-IFTIM (Association of the Development of Professional Training in Transport/Institute of Training and Warehousing Technique) in France.

In order to achieve its vision of becoming a global logistics hub, Singapore’s Trade Development Board (TDB)\(^{18}\) has been consistent in training logistics professionals equipped with supply chain management skills and other critical IT skills. As part of this effort, it launched a professional accreditation programme for logistics professionals, i.e., Certified Professional Logistician, ensuring a high-level professional certification worthy of regional and international recognition.

In comparison to Singapore and advanced European counterparts, ports in the ESCAP region lack professionals and specialists in logistics. Recently, in Korea a programme has been proposed to train 10,000 logistics specialists over the next five years in order to produce personnel to meet the growing needs of the Northeast Asian logistics system. However, this kind of programme cannot be achieved without greater institutional support. As such, the government should support the establishment of logistics education and training systems for managers and employees of logistics centres. The government should also expand continuing education programmes and institutions to ensure more highly-trained and skilled labour force for the future.

F. The development of information technology

**Objective:** To make the best use of IT to reap the benefits of e-commerce and to improve the efficiency of the logistics chain.

It is commonly recognized that ports play a critical role in their countries’ trade growth. Therefore, a number of ports have taken steps to improve the quality of their services, and to provide basic logistics and communications infrastructure in order to reap the benefits of e-commerce. Due to the increasing importance of the development of IT and information systems to control logistics activities, expenditure on IT and information system is expected to surpass inventory-carrying costs in its priority next to transportation costs in the logistics chain\(^{19}\). This fact represents a fundamental shift in logistics strategy toward information-intensive control system from asset-intensive strategies, such as warehousing and inventory level.

**Action 1:** Common-user and robust e-commerce-based administrative and commercial services should be available to allow the ports in the ESCAP region to connect to the IT networks of administrations, transport operators and logistics centres.

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\(^{18}\) This year the Singapore’s TDB has been restructured to International Enterprise Singapore (IE Singapore) to meet the challenges of an increasingly competitive global market.

Information technology, especially internet-based systems, is increasingly being employed in all logistics services. As shippers become more attuned to sophisticated supply chain management, ports will be faced with challenges to overcome. The growing power and speed of information processing is reshaping the port industry.

IT has transformed transport operators into valued-added logistics service providers. Ports will have to adapt to such changes, by offering one-stop value-added services. However, in many ports of the ESCAP region, the transaction capabilities offered by a number of port websites, which are likely to become standard features in the near future, are still not accessible to many customers. This is mainly due to a multitude of factors such as limited information and telecommunication infrastructure, limited levels of e-commerce and internet culture, and a limited skill base for building e-commerce.

The application of e-commerce in ports could contribute to the efficiency of international trade. The availability of common-user and robust e-commerce-based administrative and commercial services in the ports of the ESCAP region would allow them to connect to the IT networks of administrations, shipping lines and other transport operators. Of course, scalable systems with certain core functions are needed in order to cater to the different needs of a wide range of ports and terminals serving developing countries’ trade.

**Action 2: Steps based on balanced, coordinated and standardized information systems must be taken to improve the efficiency of administrative and customs activities in the ports of the region.**

In most ports of the ESCAP region, shippers and clients suffer from the burdensome and time-consuming administrative and customs clearance procedures. As such, there is a need to place priority on reforming the various complex administrative systems in the region. Customs are major bureaucracies where it is difficult to change operational and administrative procedures to improve services. Even a developed economy like Japan has a restrictive customs law, which states that the declaration and clearance process is accomplished only after the cargo is moved to a bonded area. For these reasons, steps must be taken now to improve the efficiency of customs activities in the region.

In addition to customs clearance, shipping companies and their agents must deal with onerous and inconsistent reporting and inspection procedures for notifying the port, coast guard, immigration and health authorities and other government organizations regarding a ship's arrival/departure, cargo handling requirements and other vessel services needed. These are all formal requirements related to the ship's port activities. The information for vessel, crew and cargo manifest, collected by one organization is seldom shared with another organization within the same port, or even within the same organization's offices in other ports. This reporting system of redundant information is labour intensive, costly and inefficient.

In order to remedy these difficulties, information system can be used effectively to streamline and enhance supply chain processes, enhance cooperation between carriers and their customers by enabling instant communications, and eliminate many burdensome procedures and regulations. For most countries in the ESCAP region, existing information systems have been developed individually for each sector, resulting in a lack of balance,
coordination and standardization between different systems and transport modes. Thus, the main issue for the development of logistics information systems in the future will be how to build balanced, coordinated and standardized information systems without interfering with the continuous development of existing systems.

Most developed ports have already implemented a variety of strategies and policies to develop their information infrastructures. In many ports, they have been transformed into integrated logistics information systems through interconnected efforts with other logistics-related information systems. INTIS at the Port of Rotterdam, DAKOSY at the Port of Hamburg, and SEAGH at the Port of Antwerp are good examples of IT that facilitates electronic submissions and clearance of shipping information.

The most advanced IT of its kind may be the PORTNET at the Port of Singapore. The PORTNET, which was developed in 1984 and then refined and improved upon over many years, is the world’s first and still-only nationwide e-commerce network that has the participation of the entire shipping and port community in Singapore. The PORTNET system facilitates end-to-end information workflow and creates value for port users in many areas, including the on-line booking of resources, e-fulfillment of port services, facilitation of billing services, customs clearance and linkage to government agencies.

G. Regulatory and institutional issues

Objective: To develop a legal framework and key institutions for the building of logistics centre in ports.

Overly complex administrative procedures and bureaucracy are frequently identified as an obstacle to building a logistics centre. If such complicated array of laws and regulations, and bureaucracy are not kept in check, MNCs may be less likely to invest in the logistics centres in the ESCAP region.

Consequently, to develop logistics centres in regional ports, there must be a high level of institutional support, with fewer regulations for its logistics centres. Indeed, ports with high institutional support and few regulations usually exhibit a high degree of development in logistics areas. Therefore, legal and institutional issues must be addressed before establishing logistics centres in port areas. The main emphasis will be on the development of a legal and institutional framework for the building of logistics centre in port regions.

Action 1: Legal and institutional issues must be identified before establishing logistics centres in port areas, and the new logistics-related laws and national strategies should be launched to transform and upgrade ports to the next level of logistics development.

As to the legal aspects regarding logistics centres in ports, institutional schemes should be made to improve the conditions and simplify the administrative procedures affecting logistics centres. Experiences around the world also show that the existence of an effective institution plays a crucial role in building logistics centres in ports. Table VI.4 shows how the building of logistic centres is promoted at the central and regional government level in the ESCAP region.
Recently, some ports in the ESCAP region have set up a new port policy, whose goal is to stimulate employment and create added-value in the region’s economy by establishing logistics centres in ports. They launched logistics-related laws and national strategies to transform and upgrade them to the next level of logistics development.

As part of its logistics-promotion efforts, the Japanese government enacted a special law in July 1992 called the Law on Extraordinary Measures for the Promotion of Imports and Facilitation of Inward Investment. The stated purpose of the law was to enhance access to the Japanese market for foreign products and to encourage more foreign companies to export to and/or invest in Japan. The law permitted the establishment of a nationwide network of Foreign Access Zones (FAZs), disagreed to establish and strengthen logistics facilities located in ports.

Table VI.4. Organizations developing logistics centres in port areas in selected economies

<table>
<thead>
<tr>
<th>Country</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>Appointed by Board of National Affairs through the application of regional government</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>Free trade area is stipulated by law</td>
</tr>
<tr>
<td>Taiwan Province of China</td>
<td>Export processing zone is appointed and approved by the Board of Administration through the application of the Ministry of Economics</td>
</tr>
<tr>
<td></td>
<td>Science industrial area is appointed and approved by the Board of Administration through the application of the National Science Committee</td>
</tr>
<tr>
<td></td>
<td>Special area Same as the Export Processing Area</td>
</tr>
<tr>
<td>Japan</td>
<td>Foreign access zone is approved by Minister of Commerce through the application of regional government</td>
</tr>
<tr>
<td></td>
<td>Free trade area Developed by the Administration of Okinawa Development</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>Appointed by the Minister of Finance and Economy, through the application of other central government</td>
</tr>
<tr>
<td>Singapore</td>
<td>Appointed directly by Minister of Finance and Economics</td>
</tr>
</tbody>
</table>

Source: Korea Maritime Institute.

Singapore already launched the Logistics Enhancement and Applications Programme, as well as the Logistics Master Plan, which was drafted by a steering committee comprised of thirteen agencies and headed by the Trade Development Board. Both of these aim to position Singapore at the forefront of logistics services in the region by creating new logistics capabilities and enhancing competitiveness.

In support of the development of ports of (Chinese Taipei) into regional logistics centres, (Chinese Taipei) introduced The International Logistics Centre Operation Act in 1999 under the Asia Pacific Regional Operation Centre (APROC) plan. The APROC plan was launched in January 1995 in an effort to encourage global firms to set up regional operation centres in Taiwan as their base for business and logistics in Southeast Asia and mainland China. For effective implementation of the plan, most of the legal revisions were
embodied in one comprehensive piece of legislation for speedy enactment as a package. The International Logistics Centre Operation Act is also focusing on amending laws and regulations that are outdated and no longer suitable for newly emerging business practice.

Recently, the Korean government also enacted The Act on Designation and Management of Customs-Free Zones for Fostering International Logistics Centres, and Busan and Gwangyang ports have been designated as customs-free zones. However, this act raises two major problems due to its inflexibility and the overly rigid regulations regarding FTZ and logistics centres.

The first is its minimum physical requirement to be designated as a customs-free zone. If logistics facilities are to become international logistics centres, such a method of prioritizing certain seaports only by physical size will not be successful. Instead, it will be necessary to develop major trading ports, as well as adjacent areas, into customs-free zones. It is both rational and internationally accepted to prioritize certain areas as customs-free zones based on their potential economic impact rather than on physical conditions. This is because, only by this method can global firms invest in areas that can operate at their full capacity based on functional characteristics and the amount of land required to build VAL service complexes in each region.

There is also a problem because within customs-free zones, production functions such as processing, manufacturing and assembly are excluded, and the only type of processing activity included is simple processing. However, in most free trade zones, it is normal to include functions such as manufacturing, assembly and processing, in addition to VAL services. Only in this way can synergy be achieved. Therefore, it is essential to integrate logistics and manufacturing functions into customs-free zones, then the logistics promotional function and the value-added logistics function can be greatly enhanced.

**Action 2: Forging key drivers for building ports into logistics centres must be encouraged to execute the tasks more efficiently and effectively.**

Some government agencies and institutions in the Netherlands and Singapore have been given credit for building their ports into logistics hubs and leveraging the existing base of regional logistics centres located in their countries to provide integrated logistics support for MNCs operating in Europe and Asia respectively.

The Netherlands’ role as an international logistics and distribution centre was promoted by two key drivers: the Netherlands Foreign Investment Agency (NFIA) and the Holland International Distribution Council (HIDC). In Singapore, the corresponding champion agencies were the Economic Development Board (EDB) and the Trade Development Board (TDB). These government agencies drew up a logistics master plan to develop Singapore into Asia’s leading integrated logistics hub. Correspondingly, Chinese Taipei set up the Coordination and Service Centre, which acts as a bridge between different agencies and coordinates their involvement for the effective execution of the APROC plan.

Summing up, ports in the ESCAP region must learn lessons from the above mentioned ports in order to ensure successful development of logistics centres. Setting up a champion agency will help in executing the task more efficiently and effectively.