V. PROBLEMS IN DEVELOPING LOGISTICS CENTRES FOR PORTS IN THE ESCAP REGION

A. Major logistics developments in the ESCAP region

**Bangladesh**

Bangladesh’s international trade is carried out mainly through its two principal maritime ports, Chittagong and Mongla. Although, the volume of cargo through the two ports was just over 17.5 million tons in 2001, it is forecasted to double over the next 10 years.

It is expected that at the end of 2006 or 2007, the Chittagong Port Authority is likely to handle about 24 million tons of cargo including about 1 million TEUs of containers. As the volume of cargo at the port increase manifold, major expansion of handling facilities is required to meet the projected demand between 2000-2007.

The Bangladesh government has given a go-ahead to the biggest United States container port operator, Stevedoring Services of America, to set up an international container terminal near the Chittagong port at a cost of about US$ 500 million. This build-own-operate project would also have an inland container terminal near Dhaka. This terminal is expected to handle 600,000 containers annually.

Presently one FTZ is developed in Chittagong and one in Dhaka. Four other similar zones are also being developed in other areas within the country. In addition, it is recommended to develop one special economic zone (SEZ) in the left bank of river Karnafully near the Chittagong port to attract foreign investors.

A Korean Export Processing Zone (EPZ) on the left bank of river Karnafully is already underway. The government is also contemplating the set-up of an exclusive Japanese Special Economic Zone (SEZ) in Bangladesh near Chittagong Port.

**Cambodia**

Cambodia has two ports. One is a river port in the capital of Phnom Penh and the other is located in Sihanoukville which is about 240 kilometres from Phnom Penh.

In order to cope with the rapid increase of the containerized cargo handled by the ports, work commenced started in 2002 to construct a new container terminal of 240 metres in length, (-) 9.0 metres in draft and equipped with two quay cranes, wharf and yard container handling equipment and a stacking yard of 65,000 square metres. The new container terminal will be operational by early 2004.

**China**

China has 50 seaports (with annual throughput of more than 1 million tons) and 60 river ports (with annual throughput of more than 0.5 million tons).
The total throughput is 2.4 billion tons, in which the container throughput is 27.5 million TEUs.\(^{14}\) Seven seaports have more than 100 million tons throughput. The port of Shanghai, with 221 million tons in total and 6.3 million TEUs of containers, became the second largest port in the world in terms of total volume, just after the port of Rotterdam, and fifth in terms of container throughput in the world.

The 1990s have witnessed a huge surge in China’s port infrastructure construction with several Chinese ports registering as the fastest growing in the world. During the period of the 9\(^{th}\) Five Year Port Development Plan (1996-2000), over 200 berths for containers, coal and petroleum were built alongside Chinese coastal areas to increase the cargo handling capacity to over a billion tons.

At Yantian Port, under phase II development, three container berths with a total area of 580,000 square metres, length of 950 metres and depth of (-) 15.5 metres and a designed annual handling capacity of 1.2 million TEUs were completed in 1999. At Dayaowan Container Terminal at Dalian, two container berths were completed in 1998.

In the Port of Shanghai, the Wai Gaoqiao Container Terminal was upgraded with an additional three berths of 900 metres in 2000 and two more berths of container terminals were added at the end of 2001. The Shanghai port area will also benefit from the US$ 350 million dredging project that is now underway at the mouth of the Yangtze river to deepen the channel from (-) 7.0 metres to (-) 8.5 metres. By 2010, it is planned to have dredged to a navigable depth of (-) 12.5 metres.

As a part of the programme to build Shanghai Shipping Centre, Shanghai started a huge project-Yangshan Terminal development. Since the Huangpu river is quite shallow in depth, it is very difficult for Shanghai to find adequate space to build new terminals to meet its booming container traffic and larger vessels. Therefore, Shanghai planned to use Yangshan islands, which are two islands, 30 kilometres away from south Shanghai. In long term, the plan is to build a bridge for connections. The first phase of the project will be to build five terminals with a capacity of 2 million TEUs.

In China, the first FTZ was established in Tianjin in the 1980s. Now there are FTZs in the majority of ports, which helps to stimulate port development and the regional economy. Many logistics centres have been built around port areas. Some port cities and port authorities such as Tianjin, Qingdao, Shanghai, and Shenzhen have big plans for logistics parks. Such logistics parks are not only for break-bulk cargoes, but also for bulk, such as coal logistics in Tianjin and Qinghuangdao. Even some river ports, such as Nanjin, Wuhu, Congqing are also planning to build logistics parks to improve their competitiveness.

Shanghai Waigaoqiao Free Trade Zone is situated in Waigaoqiao district, at the northeast end of Pudong New Area of Shanghai. By the end of 1998, a total land area of 38.5 square kilometres had been developed, and a total of 19.5 square kilometres has been leased. It is the first and biggest comprehensive zone for economic and foreign-trade-oriented activities in China with a planned area of 10 square kilometres.\(^{15}\) By the end of 1998, over

\(^{14}\) All the figures here are for mainland China, not including Chinese Taipei and Hong Kong.

\(^{15}\) Pudong is symbolizing Shanghai's future and promise. It is not just an industrial area. It is a multi-functional area expanding up to 100 square kilometres by the end of the year 2000. Since the beginning of the development...
3580 projects have been approved with a total investment exceeding US$ 4.3 billion. Among them, 53 have been set up by Fortune 500 enterprises. The four pillar sectors of the zone are: export processing, bonded storage and distribution, international trade, and exhibition of bonded commodities.

With the improvement of the port facilities in the FTZ Waigaoqiao, the volume of international trade reached US$ 1.5 billion in 1998, and the monthly average volume of the circular flow of stored freight in the warehousing industry had reached 300,000 tons per month. By the end of 1998, 2.9 million square metres of building floor space had been completed and 441,700 square metres of building floor space had been leased-out and/or sold-off.

**India**

The total capacity at the major Indian ports is expected to be 470 million tons at the end of Tenth Five Year Plan (March, 2007) against the envisaged traffic of about 415 million tons (about 88 per cent capacity utilization), it plans proceed as expected, this would signify a great relief to the existing overburdened ports.

The growth of container traffic has been fourfold over the last ten years, increasing from 0.7 million TEUs in 1990-91 to 2.9 million TEUs in 2001-02. It is forecast to be 5.1 million TEUs by March 2007.

At Chennai Port in India, work is underway on proposed extensions including a 290 metre berth, a 30,000 square metre parking yard and one container freight station (CFS) with additional equipment for two shore container gantries and two rubber-tyred yard gantries.

The Jawaharlal Nehru Port is implementing a major expansion plan of extending the container berths on a private investment basis for a capacity addition of 7.2 million tons per annum.

**Korea, Republic of**

At the Port of Busan, the New Gammon Container Terminal with four dedicated berths to accommodate 6,000 TEUs container ships was opened in 1997 and added 1.2 million TEU port throughput capacity. Three new additional container berths were completed at the end of 2001.

The completion of a huge Inland Container Depot (ICD) at Yangsan City near the Port of Busan, operational since April 2000 with an annual handling capacity of 1.4 million TEUs, will not only lessen the urban traffic congestion in Busan City but will bring improvement of container cargo flow through its integrated logistics functions.

New Busan port, a large new container terminal about 25 kilometres to the west of the existing Busan Port, is under construction with the participation of the private sector. This and opening up of Pudong New Area, local economy has kept growing at a fast speed and in a healthy way. By the end of 1998, 88 world famous MNCs had made investment in 149 projects in Pudong. Among them, 21 have set up regional headquarters in the Pudong New Area.
project (total project cost US$ 4 billion) will be completed in the year 2011 with the first phase (10 container berths) scheduled to commence operation in 2007.

The Phase I Container Terminal of Gwangyang Port (four berths of 1400 metres) was completed and started operation in 1998. The Korean Government plans to develop the 2nd Phase of Gwangyang Port (eight berths, US$ 326 million) as a principal container port like Busan as a regional transshipment centre with four berths to be operational by 2002 and four more by 2004. Hutchinson Port Holdings together with two Korean partners, Hyundai Merchant Marine and Hanjin Shipping will operate this new container terminal.

The Korean government has recognized that the logistics function of ports is key gaining competitive advantages over competing ports in Northeast Asia. This led to the introduction of The Act on Designation and Management of Customs-Free Zones for Fostering International Logistics Centres in December 1999, which activates the establishment of customs-free zones (CFZs) in ports such as the Ports of Busan, Kwangyang, and Incheon. The main aim of establishing CFZs is to develop major Korean container ports as logistics centres in Northeast Asia can be summarized as follows:

- to promote the flow of international cargos;
- to attract foreign investment; and
- to activate the mutual growth of the port and port city.

In order to achieve these objectives various commercial activities are to be allowed in the CFZs, including loading, unloading, transportation, storage, exhibition, repair, sale or processing of goods, brokerage of international and international ship transaction, and other businesses related to international logistics. Also supporting businesses such as financing, insurance, customs clearance, and wastes collection or disposal are also permitted in the zones.

**Malaysia**

Based on the Malaysian government directive in 1993, Port Klang is currently being developed as Malaysia’s national load centre and is envisaged as a hub for the region. Port Klang encompasses an area of 806 hectares comprised of North Port, West Port and South Port. Port Klang offers comprehensive state-of-the-art facilities and services for handling cargo of all types.

At the Klang Port Container Terminal of Port Klang, under the Klang Port Expansion Programme (1999-2003), Wharf No. 16 will be converted for container operations. Upon its completion, the container terminal will have six berths with a total quay length of 1,300 metres. The current Klang Port Container Terminal’s handling capacity of 1.2 million TEUs will be increased to 1.5 million TEUs with a total yard area of 48 hectares. At the West Port of Klang, four new container berths (1,200 metres) are under development, costing M$ 500 million, which will be translated to an additional port capacity of one million TEUs. By the year 2005, container throughput of the West Port will grow to 2.5 million TEUs with eight berths.

The North Port was designated a Free Commercial Zone (FCZ) in April 1993, followed by the West Port in June 1996, with the Port Klang Authority as the Free Zone Authority.
Administrator. In line with the Free Zones Act of 1990 and within the context of a FCZ, only commercial activities such as trading, breaking bulking, sorting, grading, re-packing, re-labeling and transit are allowed in Port Klang. Any form of manufacturing activity is strictly forbidden. However, simple manufacturing processes and operations including minor assembly may be allowed, with the approval of the Director General of Customs.

The Port of Tanjung Pelepas (PTP) is Southeast Asia’s fastest growing port. At Tanjung Pelepas, commercial operations at two berths began in January 2000. Phase I with six berths starting operations in 2001 offers a total linear wharf of 2.16 kilometres. This was a project directly undertaken by a concession company under the privatization deal as the newest offering of a regional transshipment hub. This new port offers both large installed capacity and a full range of equipment to match its annual throughput capacity of 3.6 million TEUs.

In August 2000, PTP secured Maersk SeaLand, the world’s biggest container operator, as a strategic partner with the commitment of bring an annual volume of 2 million TEUs to PTP. Maersk-SeaLand uses this port as a transshipment centre with investment participation. Also Evergreen began shifting operations to PTP in August 2002. Evergreen is expected to move more than one million TEUs per year through the port.

PTP currently provides 110,000 TEUs storage capacity, which is one of the largest storage facilities in the region. Comprised of both free commercial and free industrial zone, all users are exempted from various customs formalities. PTP also provides facilities for value-added activities. With 400 over acres of land reserved for distribution, logistics and warehousing activities, PTP envisions a Distripark with activities for consolidation, international procurement centres and regional distribution centres. PTP provides built-up warehouses for lease of bare land for sub-lease. An additional 600 acres of land have also been reserved for industrial activities.

PTP is expanding its logistics capacity as it plans to lure even more business, especially transshipment. MIEL Logistics Sdn. Bhd. has so far invested US$ 26 million to develop a logistic centre at PTP. The facility is located on 3 hectares or land in the Free Commercial Zone of PTP. PTP has, to date, secured main anchor tenants including Pelepas Logistics, Kenwood Logistics, Maersk Logistics, Tiong Nam, Usra and JB Cocoa. The establishment of these logistics centres within PTP’s Distripark is expected to further spur logistics activities at PTP and tap the large consolidation market away from Singapore, while at the same time, acting as a catalyst for the regional economic development.

**Philippines**

At the South Harbour of Manila Port, Asian Terminals Inc (ATI) plans to invest on AG&P properties to provide the container division an additional 742 TGS (21 ground slots) for laden containers. The P 126 million development project will give way to 240 TGS for empty container storage, 52 truck parking bays and a transit area, as well as modern office facilities for ATI personnel and shipping lines.
In 1992, the Philippine government created in former United States Naval base at Subic Bay an export oriented free port\textsuperscript{16}, governed by the semi-autonomous Subic Bay Metropolitan Authority (SBMA). The SBMA is operating the 67,000 hectares area of Subic Bay Freeport (SBF) as a self-sustaining industrial, commercial, financial, and investment and academic centre to generate, among others, employment opportunities in and around the zone.

SBF is a major base for Federal Express, one of the world’s largest logistics service provider. SBF created US$ 2 billion worth of investments in a span of four years (1993-1996) and total employment at SBF reached an estimated 50 thousand in 2001.

\textbf{Sri Lanka}

The Sri Lanka Port Authority (SLPA), which was set-up by an Act of Parliament in 1979, administers and operates all specified commercial ports in Sri Lanka. The Port of Colombo being the premier port in the country has naturally become the focal point of the all port development activities in Sri Lanka since the formation of the SLPA.

At Colombo port, under the North Pier Project, the North Pier is planned to be widened to 120 metres and will be utilized for container and general cargo handling. In the second phase, 90 metres of the pier will be completed and it will be equipped with three quay cranes and six transfer cranes with a handling capacity of 230,000 TEUs per annum. The terminal will also be utilized for general cargo handling. The Sri Lankan Government, the Sri Lankan Ports Authority and a private sector developer have initialized the primary project agreement with regard to the terminal development via a BOT scheme. The present quay will be expanded by 100 metres towards the harbor basin and three container berths will be countered with nine quay cranes and 28 RT transfers increasing the box handling capacity to one million TEUs per annum by early 2004 from the current 0.3 million. Additional feeder berths will be provided to improve the feeder container handling efficiency at Colombo Port. Approximately 70 per cent of the containers handled in Colombo port are transshipment cargo.

\textbf{Taiwan Province of China}

Taiwan is striving to improve its logistics and customs operations to become a regional transshipment and supply chain hub. In support of this endeavor, the Taiwanese government passed The \textit{International Logistics Centre Operation Act}. Consequently upon the passing of this new act, the government has been modifying related regulations and laws. Accordingly, Taiwan Customs have made adjustments to management and custom inspections.

\textit{The International Logistics Centre Operation Act} focus on regulations affecting the establishment of logistics centres. Approval to establish logistics centres will normally be restricted to governmental sectors, public institutes, and agencies approved by the government. The approval of other agencies is restricted to corporations of limited liability with capital of no less than NT $300 million.

\textsuperscript{16} The Subic Bay Free Port Zone encompasses not only the former naval base but also an adjacent area in other provinces.
Locations for international logistics centres should be inside or near port areas, export-processing zones, industrial parks, airports, or other areas considered appropriate and permitted by the Customs or related regulations. Since all land occupied by commercial port is state-owned and the use is governed by the state-owned properties law, property can be made available only on lease and cannot be otherwise disposed of.

The facilities in large scale logistics centres can be utilized solely by their operators or partially on lease arrangements. The cargos of the leaseholder should fall under the full control of the centre. Every logistics centre is a free trade zone, except for reporting requirements at the customs for inbound and outbound movement, cargoes are free for self-operations. Logistics centres may use electronic transmission systems to control clearance without the need for Customs officers to be present.

The Port of Kaohsiung and Yangming Marine Transport Corporation have jointly commenced on the development an international logistics centre. The project, expected to cost NT$ 300 million, will occupy 1.4 hectare and includes a six-storey high-tech building and a two-storey computerized warehouse. Under the BOT scheme, the interests of the building will be transferred to the government after a specified period of operations.

The location of Yangming’s logistics centre is in the proximity of the container terminal of the Port of Kaohsiung. The site is considered to be the ideal location to attract international businesses to set up their own logistics and distribution centres in the Asia Pacific. By operating an international logistics centre at the Port of Kaohsiung, Yangming is expected to extend its logistics and transportation service on a greater scale both regionally and globally.

**Thailand**

In Thailand, maritime transport carries 96.2 million tons or 86 per cent of the total freight volume. Keeping in step with the global practice of container shipment, most of the general cargos have been containerized and these are handled mainly at the Bangkok Port and Laem Chabang Port situated in the Eastern Seaboard.

These two ports are focusing on developing different strengths Laem Chabang port (LCP) will continue to expand facilities for serving increasing demand while Bangkok port, which is limited by its access channel and traffic problems in the Bangkok area, will optimize its efficiency and service levels.

With an annual turnover of some 2.5 million TEUs, LCP is the main container port for the country. It is faced with the challenges of coping with continuous growth in containerized cargos, the gradual migration of containers from Bangkok to the Eastern Seaboard. LCP has launched a vast expansion plan by constructing a second basin for six container terminals, handling 2.6 million TEUs annually. These terminals will be leased out to private operators. The first terminal with annual capacity of 600,000 TEUs has been completed and is presently in the stage of bidding. Soon two other terminals will follow to keep pace with the current 8 per cent, or some 200,000 TEU annual growth rate. After completion of the two basins, the container throughput will increase to 5.1 million TEUs per annum.
**Viet Nam**

In October 1999, Government Decree 2002 approved the Master Plan for port development until 2010 and provided orientation and policy for port development. The Master Plan of port development for the period 2010 and 2020 focuses on the development of ports in 8 groups, 9 projects from 2003, 7 projects from 2010 with total investment capital of US$ 1,237 million (2003), and US$ 2,541 million (2010) respectively. Total cargo volume is projected to reach 106 million tons by 2003 and double by 2010.

**B. Opportunities and problems**

There are sound reasons to believe that the outlook for ports in the ESCAP region to become logistics centres is bright, provided they take proper steps to be competitive. Figure V.1 shows a continuous circle of strengths and opportunities for ports in the ESCAP region with regard to developing logistics centres.

**Figure V.1. Strength and opportunities for ports in the ESCAP region**

Growing trade among ESCAP countries will result in growth in container traffic in the region and consequent port facilities to handle cargo. It is probably accurate to relate the increased volume of containers to the strategic necessity of the logistics centres in ports. Increases in container shipping are eventually encouraging the use of logistics centres. As the volume of container shipments increases, it is more and more likely that the shippers are strategically driven to a value-added, time-based logistics pattern.
Further, there has been a significant shift from the conventional way of production to more time-based, JIT-type production in conjunction with SCM system in the manufacturing sector in the ESCAP region. The trend of JIT and SCM has been widely accepted to improve inventory management and shorten lead time in the distribution channel.

The trend in the adoption of JIT and SCM increase the demand for logistics centres in ports by MNCs and logistics firms in an effort to drive improved customer service. They use ports and adjacent land to create value through VAL services. With growing recognition of the benefits of logistics centres, port authorities and governments in the ESCAP region are benchmarking advanced ports in developing logistics centres in port areas.

The last factor which contributes to and shapes the efficient building of logistics centres in ports is the existence of competitive logistics companies such as 3PL service providers. The value of 3PL in the development of logistics centres cannot be overestimated. Moving from a simple logistics company to a problem solver then to a customer care provider and finally to a professional 3PL service provider is the key to the successful operating of logistics centres in ports. The experiences of advanced ports around the world demonstrate that the increased use of 3PL service providers is closely related to the operation of logistics centres in ports. While many experts view the outlook as bright, it should be emphasized that a lot of deficiencies and problems will need to be solved if individual ports in the ESCAP region are to succeed in building logistics centres. Across the ESCAP region, there are substantial barriers to the building of logistics centres behind port areas. These problems are addressed below. See figure V.2.

**Figure V.2. Barriers to building logistics centres in the ESCAP region**

<table>
<thead>
<tr>
<th>Problem areas</th>
<th>Major problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial aspect</td>
<td>Insufficient infrastructure</td>
</tr>
<tr>
<td>Service provider aspect</td>
<td>Lack of professionals and skilled</td>
</tr>
<tr>
<td></td>
<td>workforce</td>
</tr>
<tr>
<td>Shortage of land space in port area</td>
<td>Conflict between port and city</td>
</tr>
<tr>
<td></td>
<td>Expensive land cost</td>
</tr>
<tr>
<td>Regulation aspect</td>
<td>Administrative red tape</td>
</tr>
<tr>
<td>Poor service level</td>
<td>Poor services in many ports</td>
</tr>
</tbody>
</table>

Insufficiency of port infrastructure and related facilities for logistics activities is the most prevalent problem in the ESCAP region. Lack of professional logisticians and skilled workforce is an other example. The level of third-party logistics industries in the region is viewed negatively and global standard service levels are still rare. Expensive land costs behind port areas may also restrict the construction of logistics centres in some countries. The
lack of government support and other institutional programmes in some of the ESCAP countries are also considered a hindrance to growth. Poor service levels in the ports compared to the western ports adds to the weaknesses for the region’s competitiveness.

(a) **Constraints in infrastructure**

There has been a sharp increase in container volume within the region. Since the late 1980’s, the growth rate of container traffic has exceeded that of other regions. The container throughput of the ESCAP region has been flourishing ever since the industrialization of the 1980s. It should also be noted that more than 50 per cent of cargo shipments worldwide originate from, or are headed for, the Asia-Pacific region. Demonstratively, the market share of container traffic in the ESCAP region is presently estimated to approach 60 per cent of the global total.

International transport is one of the leading growth industries in the ESCAP region. Its development depends on the development of the Asian economy as a whole. Despite regional variations and development levels among member countries, traffic demand has experienced virtually uninterrupted growth since the 1980s. In general, traffic demand runs in parallel to growth in GDP. This general pattern of growing demand is likely to persist if the current pace of economic growth is maintained.

It is forecast that the total container volume in the ports of the ESCAP region will increase from 94 million TEUs in 1999 to over 155 million TEUs in 2006. The volume will grow to around 216 million TEUs in 2011 (Ha, 2002). Already the container volume in the ESCAP region now surpasses other regions such as North America and Europe, whose container traffic is very much matured, in terms of their market share of world throughput.

In order to handle the anticipated port container traffic in 2011, it is estimated that a total of 434 new dedicated berths will be required. This requires very significant capital expenditure estimated at approximately US$ 27 billion. Moreover, substantial additional investment will also be required to secure adequate access to terminals and to build logistics centres in port areas.

However, as the overall investment in ports and related facilities has been too limited the ability of the region’s ports to absorb the growing demand appears doubtful. As such, a shortage of basic capacity will be a general problem among the ports of some major ESCAP countries in the near future.

(b) **Lack of professionalism and third-party logistics providers**

Well-developed 3PL is the key to efficiently and effectively operating port logistics centres. Many logistics experts agree that the key in operating logistics centres is highly competent 3PL service provider. However, there is still a great deal of concern that the current situation of the 3PL industry in ESCAP region, combined with the lack of professionalism in 3PL service providers, these factors will have a negative impact on the development of VAL services in the region. As such, ports in the ESCAP region should concentrate their efforts or cultivating and developing professional logistics companies, especially those in the 3PL service sector. Only by doing so can they hope to become advanced logistics ports.
The provision of a skilled workforce is also essential to the management of logistics centres in ports. Increasing the traffic volume in the logistics centres will require a greater supply of highly skilled workforce in logistics centres. Many multinational logistics companies evaluate the labour force’s ability to handle automated and technological equipment as poor in the ESCAP region. International logistics is, by nature, highly dependent on the IT capabilities of the workforce. The success of the Netherlands and Singapore has heightened the importance of ensuring that the workforce has good IT capabilities.

(c) Expensive land for the development of logistics centres

Some ESCAP countries, especially Japan, Singapore and the Republic of Korea, still have many problems with regard to high land prices or rental fees for the port logistics centres. See table V.1. Since the emergence of VAL services at ports, some countries in the region have started to develop vast areas of land for logistics centres behind port areas. But the costs of development are still too expensive for MNCs and logistics firms to locate their logistics centres in the region.

(d) Inefficient administrative procedures

Overly complex administrative procedures and bureaucratic attitudes among government officials in the ESCAP region can also be an obstacle to developing logistics centres in port areas. It is frequently indicated that government officials in the ESCAP region are more bureaucratic than their counterparts in the West. If such bureaucracy, such as lengthy and complex customs procedures, is not kept in check, multinational firms may be less likely to invest in the logistics centres in the ESCAP region.

Table V.1. Land costs for port logistics centres in selected economies in the ESCAP region

<table>
<thead>
<tr>
<th>Country</th>
<th>Land costs/m²</th>
<th>Office rental cost/months/m²</th>
<th>Housing rental fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing/Shanghai</td>
<td>82 (Economy Development Areas)</td>
<td>50</td>
<td>5000</td>
</tr>
<tr>
<td>Chinese Taipei</td>
<td>193</td>
<td>17.3</td>
<td>1,527</td>
</tr>
<tr>
<td>Chonan, Korea</td>
<td>110 (Foreign Investors Complex)</td>
<td>30.8</td>
<td>1,990</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>368 (Tai Po Complex)</td>
<td>38-57</td>
<td>2,584-4,651</td>
</tr>
<tr>
<td>Singapore</td>
<td>9.28-20.5 (Jurong Complex)</td>
<td>34.6</td>
<td>2,632-2,806</td>
</tr>
<tr>
<td>Yokohama, Japan</td>
<td>1,185</td>
<td>26.0-31.6</td>
<td>3,672-5,508</td>
</tr>
</tbody>
</table>

Source: Korea Maritime Institute.

(e) Poor service level at ports in the ESCAP region

In addition to infrastructure problems, service levels at ESCAP ports have become fairly low in comparison to the advanced ports around the world. Many ESCAP ports have been under pressure to deal with increasing cargo volume. The low level of service at these ports, regarded as one of their biggest weaknesses, will hamper their competitiveness in the
near future and become a barrier to regional ports’ efforts to forge logistics centre oriented policy. The levels of service at major regional ports, as evaluated by Korean shippers and shipping lines, are shown in table V.2. Overall, the service levels at ESCAP ports are evaluated as being much lower than their European and U.S. counterparts, with the exception of Singapore and Yokohama.

Table V.2. Service levels at twenty major world ports

<table>
<thead>
<tr>
<th>Rank</th>
<th>Port</th>
<th>Degree of Satisfaction</th>
<th>Rank</th>
<th>Port</th>
<th>Degree of Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rotterdam</td>
<td>0.970</td>
<td>11</td>
<td>L.A</td>
<td>0.836</td>
</tr>
<tr>
<td>2</td>
<td>Hamburg</td>
<td>0.940</td>
<td>12</td>
<td>New York</td>
<td>0.830</td>
</tr>
<tr>
<td>3</td>
<td>Singapore</td>
<td>0.930</td>
<td>13</td>
<td>Antwerp</td>
<td>0.810</td>
</tr>
<tr>
<td>4</td>
<td>Seattle</td>
<td>0.900</td>
<td>14</td>
<td>Felixtowe</td>
<td>0.810</td>
</tr>
<tr>
<td>5</td>
<td>Yokohama</td>
<td>0.900</td>
<td>15</td>
<td>Bremer Haven</td>
<td>0.800</td>
</tr>
<tr>
<td>6</td>
<td>Long Beach</td>
<td>0.870</td>
<td>16</td>
<td>Le Havre</td>
<td>0.770</td>
</tr>
<tr>
<td>7</td>
<td>Oakland</td>
<td>0.860</td>
<td>17</td>
<td>Kaoshiung</td>
<td>0.738</td>
</tr>
<tr>
<td>8</td>
<td>Tokyo</td>
<td>0.860</td>
<td>18</td>
<td>Keelung</td>
<td>0.667</td>
</tr>
<tr>
<td>9</td>
<td>Hong Kong</td>
<td>0.850</td>
<td>19</td>
<td>Bangkok</td>
<td>0.560</td>
</tr>
<tr>
<td>10</td>
<td>Kobe</td>
<td>0.840</td>
<td>20</td>
<td>Busan</td>
<td>0.550</td>
</tr>
</tbody>
</table>


Note: Evaluated by Korean Shippers and shipping lines.