National logistics master plan and strategies for integrated intermodal transport systems in Korea

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The Korean Peninsular located at a crossroad in Northeast Asia
- A land bridge between land powers and sea powers (China, Japan, Russia,...US)

Source: Sung Jun Park, KMI, National Seminar on Integrated Intermodal Transport Connectivity, Yogyakarta Indonesia, 8-9 September 2015
Objective & Strategy

Objective
- Transport infrastructure expansion of world-class road, railway, airport and port
- Construction of integrated land-sea-air network
- Reduction of socio-economic costs caused by transportation logistics activities
- Implementation of sustainable green growth for future society

Strategy

Strategy1 Enhancement of national competitiveness through effective sectoral stock coordination
- Improvement of coordination and efficiency of a transport system
- Railway express and road efficiency

Strategy2 Implementation of intermodalism for enhanced traffic linkages
- Improvement of transit system among transport modes
- Construction of transport system connected with logistics hubs

Strategy3 21st century global transportation logistics powerhouse realization for the enhancement of national competitiveness
- Land/Sea/Air integrated international network
- Dealing with integrated international transport/logistics

Strategy4 Buildup of low-carbon and green growth transport system
- Switch to green growth transport system
- Future transportation technology development and implementation

Strategy5 Provision of advanced traffic service for securing transport accessibility in terms of basic human rights
- Enhancement of safety and security
- Enhancement of social equity in traffic service
Investment & Results

Total Investment (2011-2020)

<table>
<thead>
<tr>
<th></th>
<th>road</th>
<th>train</th>
<th>port</th>
<th>airport</th>
<th>logistics etc.</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment (trillion won)</td>
<td>70</td>
<td>72</td>
<td>18</td>
<td>1</td>
<td>24</td>
<td>185</td>
</tr>
<tr>
<td>Ratio(%)</td>
<td>37.9</td>
<td>38.9</td>
<td>9.7</td>
<td>0.5</td>
<td>13.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Infra Expansion (2011→2020)

(Road) 17,596 km → 19,854 km
⇒ Total extension 2,258 km ↑

(Railway) 3,378 km → 4,955 km
⇒ Total extension 1,577 km ↑

(Port) 21.86 million TEU/year → 34.12 million TEU/year
⇒ Handling capacity 12.26 million TEU ↑

(Airport) 498 thousand/year → 825 thousand/year
⇒ Flight capacity 327 thousand/year ↑

Expected effects

Direct Effects
- Benefits: 20 trillion won (per year)

<table>
<thead>
<tr>
<th>Benefits(billion won/year)</th>
<th>CO2 emission (thousand tCO2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Operating Cost</td>
<td></td>
</tr>
<tr>
<td>Travel Time Cost</td>
<td></td>
</tr>
<tr>
<td>Traffic Accidents Cost</td>
<td></td>
</tr>
<tr>
<td>Environmental Cost</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>1,912</td>
<td>16,907</td>
</tr>
<tr>
<td>135</td>
<td>955</td>
</tr>
<tr>
<td>19,909</td>
<td>104,831</td>
</tr>
</tbody>
</table>

Indirect Effects
- Production inducement: 393 trillion won (total)
- Employment inducement: 3.5 million persons (total)

<table>
<thead>
<tr>
<th>Indirect Effects</th>
<th>Production Inducement</th>
<th>Employment Inducement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>392.8 trillion won</td>
<td>3.5 million persons</td>
</tr>
</tbody>
</table>
Ⅱ. National Logistics Master Plan 2016-2025

Progression of the National Logistics Master Plan

- Logistics policy before 1990s
  - The concept of logistics has begun to be settled, the time of establishing logistics policy based on transportation activities such as truck transportation industry policy, rail transportation policy, shipping policy, etc.

- Logistics policy of the 1990s
  - An independent and comprehensive logistics plan has begun to be established, extending the scope of the logistics policy by establishing a basic plan for cargo distribution (1994-2003)

- Logistics policy of the 2000s
  - The logistics policy shifted from the supportive concept of economic activity to the national growth strategy. In 2001, the basic plan for cargo distribution was changed to the national logistics master plan.
  - Northeast Asian logistics hub strategy emerged as a subject of the major logistics policy

- Participatory government (2003-2008)
  - Northeast Asia logistics hub strategy was selected as the main state affairs, Establishing a road map to implement the Northeast Asia logistics hub (August 2003) and the revised national logistics master plan(2006)

  - The national logistics master plan was established with the vision to be the ‘global logistics powerhouse leading the 21st century low carbon green growth’. ‘Securing long-term growth engine for the logistics industry’ was added to the existing goal of the participatory government such as ‘creating national resources through logistics’, 'Improving the efficiency of the national logistics system'

  - Unlike the government-led policies centering around the export and import logistics, establishing the national logistics master plan (2016-2025), which mainly reflects the logistics for life initiated by the private sector and the novel logistics support policies
### OLD PARADIGM

<table>
<thead>
<tr>
<th>Main Body</th>
<th>Government-led logistics relying on government support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>Export and import oriented logistics aiming at economic growth</td>
</tr>
<tr>
<td>Form</td>
<td>Single / labor divided logistics based on individual government division / individual industry</td>
</tr>
<tr>
<td>Role</td>
<td>Supportive logistics led by manufacturing and distribution</td>
</tr>
<tr>
<td>Scope</td>
<td>Regional-based logistics based on domestic networks</td>
</tr>
</tbody>
</table>

### NEW PARADIGM

<table>
<thead>
<tr>
<th></th>
<th>Private sector initiated logistics promoting voluntary creation of the creative services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Life-friendly logistics for the convenience of the people (B2C, C2C, M2C, etc.)</td>
</tr>
<tr>
<td>Convergence logistics</td>
<td>Convergence logistics pursuing sharing / cooperation (Logistics + IT + distribution + finance etc.)</td>
</tr>
<tr>
<td>Leading logistics</td>
<td>Leading logistics leading manufacturing and distribution</td>
</tr>
<tr>
<td>Global linkage / scalable logistics</td>
<td>Global linkage / scalable logistics in preparation for the era of the unified Eurasia</td>
</tr>
</tbody>
</table>

### Progression Status / Outcome Analysis

- Structural analysis of the current plan
- Progression status & drawback analysis

### Policy Conditions and Competency Analysis

- Analysis on change factors of domestic and foreign logistics environment
- Benchmarking on overseas cases
Becoming a Global Logistics Power through Innovation on Logistics and Creation of New Industry

### Jobs of Logistics Industry
- 590 → 700 thousand

### Logistics Performance Index
- 21 → 10th place

### Turnover of the Logistics Industry
- 91 → 150 trillion

#### Strategy 1
- Develop high value-added logistics industry in response to changes in industry trends
  - Creation of new value-added logistics industry
  - Preparing a support system to create new logistics industry
  - Strengthening the competitiveness of the logistics hub

#### Strategy 2
- Expansion into overseas logistics market due to change in world logistics landscape
  - Establishment of global logistics base including the development of the Korean type GTO
  - Securing a network to enter logistics markets in Northeast Asia and Eurasia
  - Commercialization of Arctic sea route, responding to the expansion of the Panama Canal, etc.
  - Strengthening support system for cross-border e-commerce delivery
  - Establishing a joint platform to support overseas advancement

#### Strategy 3
- Development and diffusion of smart logistics technology for the future
  - Early commercialization of drones, and the robot technology for logistics center
  - Promoting development of the core smart logistics technology
  - Establishing and promoting a mid-long term roadmap
  - Establishing an information utilization system integrating air, land and sea information system

#### Strategy 4
- Creating a sustainable logistics industry environment
  - Establishing a basis for achieving the 30-year greenhouse gas reduction goal
  - Promoting eco-friendly green logistics
  - Establishing a national hazardous material safety management system, etc.
  - Developing the e-navigation technology, etc.
### National Logistics Master Plan 2016-2025 - Expected effects

<table>
<thead>
<tr>
<th>Micro Indicator</th>
<th>Major Goal Index</th>
<th>Unit</th>
<th>As-is Recent</th>
<th>‘20</th>
<th>‘25</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fostering global logistics companies</td>
<td>Ranking</td>
<td>24 (As of’14)</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Global ranking of domestic logistics companies with 3PL turnovers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Strengthening national logistics competitiveness</td>
<td>Ranking</td>
<td>21 (As of’14)</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>LPI Index Ranking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Reducing national logistics costs</td>
<td>%</td>
<td>10.4 (As of’13)</td>
<td>9</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>National logistics cost to GDP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Creating professional jobs in logistics sector</td>
<td>%</td>
<td>18.76 (As of’14)</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>The ratio of professional manpower of the comprehensive logistics service enterprise</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of new businesses in the field of logistics such as start-up</td>
<td>No.</td>
<td>40 (As of’15)</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>
Domestic Modal Shift Subsidy scheme

• Outline
  – Converting transportation method of cargos based on road transport to rail or coastal shipping, or providing subsidies the new cargoes to be transported by rail or coastal shipping within the budget by deciding the total volume and subsidy amount through the agreement with the service provider
  – Started to provide the modal shift subsidy from 2010
  – Annual average of KRW 5 billion (KRW 2.5 billion for railroad, KRW 2.5 billion for coastal shipping)

• Legal Basis
  – Article 21 of the 「Sustainable Transportation Logistics Development Act」 and Article 21 ~ 25 of the Enforcement Decree of the Sustainable Transportation Logistics Development Act
  – Regulations concerning the modal shift agreements (Announcement No. 2017-134 of the Ministry of Land, Infrastructure and Transport)
  – Regulations concerning the modal shift agreements (Announcement No. 2016-85 of the Ministry of Maritime Affairs and Fisheries)

• Purpose
  – Reducing social and environmental costs and realizing sustainable logistics by promoting the modal shift to the railroad and coastal shipping which are the eco-friendly and low-carbon green transportation method and the creation of new cargoes using the railroad and coastal shipping
IV. Strategies for integrated intermodal transport system

**Foreign-Mutual Access of Trailer Chassis (Korea-China, Korea-Japan)**

- Mutual access of trailer chassis plays a key role in linking land and maritime transportation, increasing logistics efficiency and speed.

  “Sea-Land Intermodal Transportation” is the method to load and transport trucks from each country on a ship according to the port, area or route agreed between parties (Article 1, Clause A of the Korea-China Intermodal Transport Agreement, Sep. 7, 2010)

  ※ Step 1 (Towed trailer transport method), Step 2 (Tractor+trailer transport method)

- “Towed trailer” means a non-motor towed trailer that is recognized by MLTM and MLIT to be aligned with each county’s technology and safety standards of vehicles, and conditions for road operation. “Mutual operation” means an operation of a trailer permitted to be operated by both countries. (Paragraph 1.1, 1.2, Record of Discussion between MLTM and MLIT, Jun.15, 2012)

  ※ Pilot Project.

**Advantage**: Door-to-Door service, Speedy, Safety, Convenience for transporting special cargo

Source: Eun Woo Kim, KMI, EGM on Development of Integrated Intermodal Transport System, Bangkok, Thailand, 1-2 June 2017
Current Status between Korea and China

- Opened ports: 10 ports (3 ports in Korea, 7 ports in China), 10 service providers
  - (Korea) Incheon, Pyeongtaek, Gunsan
  - (China) Weihai, Qingdao, Rizhao, Longyan, Shidao, Yantai in Shandong province; Lianyungang in Jiangsu province
- Operation license: Issue 10,000 licenses every year

- Imbalance of mutual operation between Korea and China (as of 2016):
  Korea ⇒ China: 1,164 units, China ⇒ Korea: 7 units
- Only 3 out of 10 opened routes have operation records
  - Incheon-Qingdao (587 units), Incheon-Weihai (439 units), Pyeongtaek-Rizhao (139 units)

- Scope of Cargo: No restriction
  Korea ⇒ China: semiconductor equipment, electronic parts, auto parts, machine equipment
  China ⇒ Korea: live fish, stone

Source: Eun Woo Kim, KMI, EGM on Development of Integrated Intermodal Transport System, Bangkok, Thailand, 1-2 June 2017
IV. Strategies for integrated intermodal transport system

Foreign-Mutual Access of Trailer Chassis (Korea-China, Korea-Japan)

Current Status between Korea and Japan

- Opened ports: 3 ports (1 port in Korea, 2 ports in Japan)
  - (Korea) Busan ; (Japan) Shimonoseki Port(May.29, 2013), Hakata port(Nov.2014)
- No. of Double Number Chassis: 32 trailers(Chunil: 28, Nippon Express: 4) as of 2016
- Scope of Cargo: Only automobile parts
- Operation route: manufacturing factory in Korea ⇒ Busan Port ⇒ Shimonoseki Port in Japan ⇒ Nissan factory in Kyushu

Source: Eun Woo Kim, KMI, EGM on Development of Integrated Intermodal Transport System, Bangkok, Thailand, 1-2 June 2017
IV. Strategies for integrated intermodal transport system

Foreign-Mutual Access of Trailer Chassis (Korea-China, Korea-Japan)

Efforts and Future Plans between Korea and China

< Efforts >


Korea

- Lowered tariff warranty fee
- Exempted cargo entry/departure fee
- Installed and operated inspection office in the wharf of Incheon port

China

- One-stop service including quarantine, customs inspection by Ministry of Justice and issuance of operation license

Improvement of the tariff exemption warranty system

(Previous) Warranty issuance fee: 70,000 KRW per trailer
(Improvement) Reduced to 40,000 KRW per trailer

※ Vehicles exported and imported temporarily on condition of re-export are exempted from tariff. However, warranty should be submitted to the customs office

Operation of special trailer

(Previous) Non-powered truck which meets technical standards and operation requirements
(Improvement) Accept all towed trailers regardless of shape for the target vehicle

< Future Plans >

⇒ Plans to suggest to Chinese government a demonstration project using cargo van or tractor+trailer methods targeting cosmetics and fresh food which are popular in China

Source: Eun Woo Kim, KMI, EGM on Development of Integrated Intermodal Transport System, Bangkok, Thailand, 1-2 June 2017

< Efforts >


Korea

- Extend the term for exemption described in Ordinance on Special Provisions for Automobile Management until Dec. 31, 2018

Japan

- Added one more port - Hakata port

< Future Plans >

- The two countries will explore possibility of the new pilot project in terms of route and items, considering demands of consigners and logistics enterprises through reviewing the result of the existing pilot project.

Source: Eun Woo Kim, KMI, EGM on Development of Integrated Intermodal Transport System, Bangkok, Thailand, 1-2 June 2017
V. Suggestions

- Coherent Policy for establishing the Intermodal Transport System
- Support for environmentally friendly vehicles (railway, Short Sea Shipping etc.)
- Strengthen international cooperation with neighboring countries
- Participate actively in programs for cooperation with international organizations including UNESCSP
Thank You!
អរគុណច្រើន!!
감사합니다 !!!

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