

ISSN 2093-3584

The KMI News Letter

**Ocean & Future**

October 2014. Vol.55

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# Necessity for Investment Cooperation in Shipping and Port under Korea

– Turkey FTA

## Background

Free trade negotiations between Korea and Turkey made progress in three sectors - commodity, services and other sectors (see Figure 1). Korea-Turkey free trade agreement in goods was concluded in 2013 and Korea- Turkey service negotiations reached agreement in July 2014. In this context, the related businesses of Korea obtained additional legal base in the Mediterranean, the Black Sea and the Middle East for entering into maritime trade, chartering business, ship maintenance and management and cruise. Considering the strategic geographical importance of Turkey as a gateway to the Black Sea and Central Asia, it is necessary for Korea to

Specific commitments of both parties seem to be reasonably reached, taking into account that the sensitive cobatage issues were excluded. Both countries showed a comple- mentary position for cooperation in shipping fleet operations and port development. Korea stands 5th in the world shipping fleet, with 80 billion DWT, while Turkey, 13th, with 30 million DWT. Korea's Busan port treated with 17 million TEUs in 2012; Turkey's Ambardi port recorded 3.1 million TEUs as in the Figure 2. Turkey has a strong truck transportation presence in Europe, the Black Sea and the Central Asian region.

<Figure 2> Container throughput of Turkey's Major Ports

make and implement an investment cooperation road- map to have competitive edge in the shipping and port industries.

< Figure 1> Negotiation Structure of Korea-Turkey FTA

Article 1.5 of chapter1

3,500

3,000

2,500

2,000

1,500

1,000

Unit: 1,000TEU

573

3,097

Ambarli

1,263

Mersin

696

Framework Agreement

….gradually liberalize trade in services … in

500

0

572

364

lzmir

conformity with Articles of GATS

2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012

Agreement on Trade

in Goods

Agreement on Trade in Services on investment

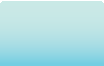
Any other Agreement Such as Agreement procurement

<Perspective> Various cooperative ventures expected, taking advantages of FTA

Both countries may promote various cooperative

GATS: General Agreement of Trade in Services in 1994

OPINION



## Present Status and Perspective

### <Present Status>

Both parties practically agreed to make specific commitments in international shipping services. Turkey will present new business opportunities to Korea. Turkey made specific commitments in a limited number of sectors including international passengers and traffic transportation, chartering business, ship maintenance and management, while along with them, Korea’s commitments include a bigger number of sectors such as port transportation, ship agency and customs clearance.

businesses including joint shipping business operations, ship repair and maintenance, etc. Korea has strong main shipping lines, while Turkey has developed specified shipping routes in the Mediterranean and the Black Sea, thus complement each other positions. In the areas of ship repair, maintenance and management, Korea may provide Turkey with ship parts and equipment and Turkey businesses can lead the ship repair and maintenance sectors in the region. Cooperative business opportunities may be explored in developing ports and constructing logistics centers, that will in turn handle and process commodities import and export between Europe and Asia.

## Implementation Efforts Needed for Establishing Intergovernmental Policy Cooperation Road-map



Turkish participants to a seminar on investment cooperation held in Istanbul May 2014, asked Korean partners to make investments in the shipping and port sectors. Korea's Humanity and Social Research Association and Turkish External Economic Cooperation Committee agreed unanimously with the importance of making various efforts for sustainable implementation of the FTA. Most Turkish participants demanded Korea to increase its investment , considering widening international deficit since the FTA took effect .

Turkish Chamber of Shipping showed interest in the ship repair business, ship management business and heavy material transportation in Asia and Central Asia. The business model may be a combination of Korea’s finanial, capital and marketing capacity and Turkish workforce. Korea may use Turkey as a springboard for its ocean industry outreach into the Middle East, the Black Sea and Central Asia. The outreach into the third country logistics market based on both countries’ cooperation may provide them with various business opportunities.

## Policy Recommendations

Turkish Bilateral channels such as implementation committees of Korea and Turkey may develop and share a cooperative road-map and implementation plan. Both countries may conduct ocean industry cooperation projects including those in the shipping and port industries. And a policy cooperation road-map and implementation plan should be established in order to support such projects. First of all, pilot projects such as ship repair and maritime enterprises for heavy material transportation in the Black Sea area should be explored. If they are proved to be viable, other business opportunities may be explored further according to their business feasibility. Bilateral outreach in port development and construction of logistics facilities in the Black Sea and Central Asia may be promoted. Both parties may share policy cooperation road-map to facilitate the projects. In a way, a joint shipping and port cooperation body may be organized among Korea, Turkey, Georgia and Azerbaijan in the Black Sea and Caspian Sea.

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OCEAN POLICY

Seoul, Preparing for Call of Ultra Large Container Ship

- KMI, Conducting R&D to Develop New Future Port Model for 2017-

Large container shipping companies including Maersk development validity analysis on the construction of

Line step up its orders for large container ships for the 24,000 TEU container ships is currently underway. It also operation with economies of scale. This in turn gradually predicted that the construction will begin on the Korean increases the average type of ships in operation (the shipyard in two years at the earliest.

average type of ships in operation of 10,780 TEU (as of September 2014) → average type of ordered ships 12,620 TEU).

According to the Ocean Shipping Consultant, the

Meanwhile, JOC or Journal of Commerce, a US shipping,

port and logistics journal, analyzed that the Asian ports currently maintain its port productivity in a way of employing additional equipment and night shift for the

8,000 TEU and larger ships. It forecasted that however it might be difficult for the ports in Asia to maintain the present level of service without developing a new port system as the 18,000 TEU and larger ships start its operation.

Therefore, in the times when ultra large container vessel with the capacity of over 24,000 TEU starts its launch, Korean ports should optimize the current port management and develop a world-leading innovative terminal model in order to maintain the current container handling volume and productivity.

With the support from the Ministry of Maritime Affairs and Fisheries, KMI implements the first stage R&D project on “Development of Low Carbon Automation Container Terminal Technology” in order to develop a new concept of container terminal model and to improve cargo productivity (project period: June 2013 – March 2017).

The first stage project aims to develop two scale models for a new concept of highly productive, eco- friendly and fully-unmanned, automated terminal that can provide a one-day service for call of ultra large

container ships. The first model is designed as a new concept of future-oriented container terminal so that it can provide a one day service when a 25,000 TEU ship makes a call. The purpose of the second model is to improve the existing terminal design and operation technology so that it can deal with the 18,000 TEU ships within 24 hours.

If Korea implements the project on “Technological Development for Low Carbon Automated Container Terminal” in an effort of being prepared for the call of ultra large container vessels faster than its competitors, it will attract more shipping companies and alliances who value service time the most when the ultra large container vessels are in full operation. Attracting them will not only contribute to the development of national and local economies, but also heighten the status of Korean ports to the world’s no. 1 transshipment port that represents the East Asia.

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# Port Labor, Prepare for Future Tidal Change

The harbor cargo-working refers to a work of loading and unloading from ship to land and from land to ship with the workforce of 10 people, using crane or mobile crane. Port workers engages different types of labors, line- hanging to the cargo, supervising, lashing and driving cargo cranes or terminal vehicles within the port. Port laborers perform loading and unloading works and related others at container ports or general bulk ports that deals with coal, metal, grains, cars and mineral materials.



As of 2013, 17,834 port workers were employed by the total of 388 companies in the port cargo industry in Korea. In 2004, 280 cargo companies hired 23,063 workers. Therefore, ten years later in 2013, the number of cargo companies increased by 86.4% and that of port equipment also increased by 27%, but that of port workers decreased by 22.7%. It demonstrates that there is a drastic change in the logistics environment, especially in

the port workforce and it also shows a sign that there will be a severer change in the upcoming future.

Some in the welfare and cultural area predicts that the population will decrease and the aging society will arrive. And in the IT field, the importance of industrial productivity and efficiency will be emphasized further along with technological convergence, expansion of new growth engine industries and nurturing of knowledge service. This will lead the traditional primary and secondary industries to seek for ways to have higher added values.

Ports are at the forefront of such a rapid social change. As previously mentioned, decreasing port labor demon- strates the changing trend; increasing IT-based mechani- zation and automation system and increasing demands for efficiency and productivity. The world’s first automated container port was built in the Netherlands in 1993,

which aimed to replace expensive port workers. As such, the first introduction of automated system was to improve company’s management; however the current trend of automation is driven by rapid technological development and convergence. The construction of automated ports enjoys a high annual growth rate of more than 16% world-wide including EU, the Middle East, Singapore, the US, Korea and China. Later this year, the Netherlands will run a cutting-edge smart unmanned terminal that does not include any manual work. The US LB port in LA that has one of the strongest port labor unions in the world also has a plan to construct and operate an automated terminal from 2014.



It is carefully forecasted that it is inevitable that the future port environment will turn into an unmanned and machine-based one from the labor and machine-centered one as the port work has changed from labor-oriented to labor and machine-oriented. It is not a story of distant future but this will become a reality in the majority of ports within 20 years in the future. A decrease in port labor force is an unavoidable reality for the Busan Port, Korea. The North Port operators demand management improvement and the New Port operators introduce a yard automation system for better productivity and efficiency. No one is to blame for that, however it is a natural process of transition.

Then how should do 17,000 port laborers in Korea

embrace such a change at this point? The change is not reversible and the port workers should prepare for the change in advance. They also have to seek for a change from an existing labor-intensive workforce to high added value cargo industry workers with the capabilities in the areas of IT, machine and control, maintenance and service. It is significant to take a closer look at the statistical data that the arrival of the internet creates 2.6 jobs in the internet-related areas with the expense of one manufacturing worker.

The ongoing automation, mechanization and IT-based development trend of ports might take away job from the existing workforce at the port. However, it will create new areas and new knowledge and service-oriented future jobs moving away from the existing labor-intensive ones. For that, the government should come up with the policy and institutional measures such as providing a new training system, establishing a duty change system and organizing professional training and education organizations to help the port workers engage in the high added value industries in the upcoming future.

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* Estimation of adequate investment in port infrastruct-

RESEARCH PROJECTS

ure and policy direction

* + Comprehensive plan on marina port development in

Choongchungnamdo

* + A study on improvement and promotion of towage

system

* + A study on maritime and fisheries future vision

establishment

* + A study to promote cooperative relation among

Northeast Asian ports

* + An estimation of social costs of maritime accidents
* Development of EBSA national report on biodiversity

convention

* Impacts of radioactivity on fisheries and radio activity

pollution cases

* Implementation plans for 'Beautiful Busan Port'
* A survey on promising fisheries export items to China
* Pilot supply and demand forecast under changing

environment and institutional improvements

* + Strategies to enter logistics market in Northeast China:

based on China-North Korea cooperation

* + An In-depth analysis on responsive measures prepared

for TPP participation

* + A study on definition and scope of fishing villages for

comprehensive fishing village development

* + Global network building to strengthen maritime

territory, incl continental shelf

* + Improvement on strategic environmental effect

evaluation system

* + Polar sea utilization measures through analyses on

major nations' arctic policies

* + Special categorization of fisheries industry and statistics

analysis

* + 2014 analysis on actual condition of beaches and

management types

* + A study on environmental standard establishment for

each water

* + Follow-up measures for Arctic Policy Master Plan
  + A study on Eurasia intermodal transportation/logistics

networks building

* + Improvement of search and rescue under ocean disaster
  + 2014 implementation of total pollution load management

system on the Masan Bay special management water

* + 2014 Yeosu International Academy Project
  + A validity analysis on Boryong multifunctional

development and basic plan

* + Pilot projects on fisheries observation
  + Fisheries export market development before Korea-

China FTA

* + Regional model development for access to biological

resources and benefit sharing

* + 2014 operation of international logistics analysis center
  + A study on abalone processing industry and processed

products

* + Preparation for bilateral and multilateral shipping

service negotiation, incl. Korea-China FTA

* + A consulting project on 2014 Ongjin-gun Fisheries

Mutual Logistics

* + Development of marine safety index and validity of

hands-on experience facilities

* + A validity study on international cruise tourism and

master plan establishment

* + National contest on knowledge sharing for fishermen
  + 2014 national transportation surveys and DB establishment
  + 2014 consigned operation of shipping, port logistics

information center homepage

* + Certification of good logistics warehouses in port area
* The 1st study on unification preparation (shipping industry)
* 2014 Entrusted operation of shipping demand prediction

center

* Provision of the Regional Study on Efficient and Effective

Logistics Information System for the UNESCAP

* Operation of private-government-industry-university

conference at Ulsan coast and the Gwangyang Bay

* Integrated export certification and national brand

development

* Development of national fishing ground usage models

and present condition investigation

* Coastal basic analysis
* Impacts of Korea-China-Japan FTAs on fisheries sector

and responsive measures

* Strategies for Arctic Ocean and Fareast Russia logistics

linkage

* A study on ocean and fisheries industry categorization

system and statistical foundation

* A study on regulation costs according to total regulation

cost management

* An analysis on SOI of convention on biological diversity
* A review on total port load system and economic validity

of new target ports

* A review on economic validity and financial soundness

of port logistics (Philippines port development)

* Exploration of 2014 maritime and fisheries ODA

projects

* A study on international cooperation and overseas

advancement to address coastal disasters

* Designation and management of coastal erosion

management zone

* Technology development for low carbon automation

container terminals

* R&D on marine environment and ecosystem management

nearby Saemanguem

* A study on development condition for marina ports and

demand estimation

* Policy development to utilize offshore geological storage

of CO2

* Measures for the 4th fisheries development comprehensive

plans

* Mobile rack and simple cargo handling support

technology for effective and easy cargo handling

* Technology development prepared for coastal erosion

(2nd year)

* Advancement into shipping and logistics market in the

Black Sea

* + Operation measures for changes rates for container

cargo handling

* + A basic study on introduction of total coastal pollution load management to Ulsan waters under special manage- ment
  + Korea-China FTA domestic supplementary measures
  + Development of fishing villages into the 6th industry

(direction and models)

* + A policy study on utilization of container searcher
  + Entrance plan into shipping and logistics market of

Russia Fareast

* + Follow-up measures for coastal passenger ship safety

management innovation

* + LNG bunkering supportive ports development measures
  + A study on more distribution of small and medium-

sized LNG ships

* + A study on standard synchronization of port cargo

handling equipment

* A validity study on introduction of maritime economic

special zone

* Consigned host of business forum on Korea-Russia

Logistics Cooperation Promotion

* A study on biz model development and luring of

business in Pyongtaek-Dangjin Port

* A basic Plan on Myanmar port development and its

validity

* A validity study on master planning of Russia Far East

Port

* The 2nd port redevelopment basic planning (academic

research)

* The 3rd nationwide costal port master plan revision

(prospects for development condition)

* A study on expansion of aquaculture insurance items
* Competitiveness analyses of individual fish stock

prepared for Korea-China FTA concession plans

RESEARCH FINDINGS

An Economic Validity Analysis on Marine Transportation Safety Facility

1. Purpose

relevant industrial development.

* The study justified constant infrastructure investment

with its analyses on economic validity of investment 2. Methodologies and Feature

into marine transportation facility.

* 1. **Methodologies**
* In addition to proving investment effects, it built a

consensus on governmental support for certain areas, • The study conducted preceding research and literature

such as safety, environment and security which have analyses on marine transportation. difficulties in inducing private investment.

* + For the analysis, it targeted the Vessel Traffic Service
* The study analyzed economic effects of prevented (VTS) which is relatively in larger scale than other marine accidents caused by various investments in marine transportation facility.

marine transportation infrastructure.

* + It examined budget, investment details, number of

– It examined economic effects of preventable and marine accidents and their damages over the last five reducible marine accidents as well as effects of years.

* + It evaluated research materials in different areas, such as roads and railways, which used the contingent valuation method (CVM).
  + It held expert workshops to gather opinions on

economic effect analyses and to set policy direction.

### 2) Feature

* + Marine transportation facility is public goods for the general public and their safety. The study used the Contingent Valuation Method (CVM), a method to estimate economic value of non-market goods, such as environmental goods.
  + In order to analyze economic effects of marine accidents preventable by the VTS, the study estimated costs caused by marine accident cases.
    - It conducted surveys with people and shipping companies in local areas where VTS is to be established in the future.

3. Results

### Summary

* + Out of the total budget for establishing marine transport- ation environment until 2016, KRW225.4 billion is earmarked for expanding marine transportation control infrastructure, KRW 194.9 billion is for VTS facility expansion and KRW 30.5 billion is for coastal VTS expansion.
  + According to a survey with people in areas where marine transportation control center is to be built (Tongyoung), the yearly benefit from building new VTS is estimated at KRW 11billion.
    - If fees are paid in the form of income tax for five years from 2014, corresponding benefits during the same period will reach KRW 47.3 billion in current value.
    - An analysis on economic validity of VTS establishment in Tongyong showed the B/C ration stood at 3.193, far higher than 1. The Net Present Value (NPV) was KRW 32.5 billion and the Internal Rate of Return

(IRR) turned out to be 37.4% which was higher than social discount rates of 53.5%. On balance, the establishment has reasonable economic validity.

### Policy contribution

* Marine transportation safety facility requires continuing investment because more ships will come to and go out ports with increasing marine leisure and economic activities. Moreover, larger and faster ships call for accident prevention and marine environment protection.
* Current marine transportation facility is usually made in advanced nations. Therefore, local manufacturing of such facility will lead to industrialization of the field.

### Expected benefits

* The study can be used as a case analysis on investment

in marine transportation facility in the future.

– Marine transportation facility is basic infrastructure for safety, which makes investment into them free from economic validity. However, once economic validity is secured, budget negotiation and persuasion of the public can become easier and more meaningful.

* The study raised the need for a basic unit analysis

system on marine accidents.

– The estimation of marine accident costs by the Korea Transport Institute has big significance and role. Nevertheless, that is not specified for marine transportation and has limited data. The study paves the ground for discussion on constant data and work system for future research on estimation of marine accident costs.

* The study induces continual investment into marine

transportation facility.

* Generally speaking, investment into safety facility or system cannot gather attention even for a short period of time unless accidents occur or such investment becomes a social issue.
* However, one marine accident, particularly within

controlling zone, can produce loss of lives and property damages, paralyzing port function and generating environmental pollution. Therefore, the study can encourage advance investment for accident prevention.

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# A Study on Problems and Improvement of the Sea Area Utilization Consultation System

## Purpose



* + The sea area utilization consultation system plays a role of marine environmental management. The study aimed to present improvement measures which would strengthen identity of the sea area utilization consultation system and its development.
    - The study intensifies the system’s distinctiveness by differentiating its function from similar systems for marine environmental management
    - It presents measures to improve effectiveness of the sea area utilization consultation.
    - It explores demand for better system and organizations, presents alternatives and builds the foundation for stable system operation.

## Methodologies and Feature

### Methodologies

* + Environmental assessment and analyses on materials which detailed the current operation of sea area utilization consultation system
  + Investigations on experts’ awareness about the system
  + Joint research with expert organizations to benchmark

similar systems

### Feature

* + The study presents detailed sectoral improvements including upgrading of basic system of the sea area utilization consultation. In this regard, it seeks change of

environmental assessment in maritime affairs.

## Results

### Summary

* The study proposed measures to intensify status of the

sea area utilization consultation system.

* It expanded target projects of the system to include development activities in the coastline. By doing so, the study buttressed the system’s virtuous cycle where activities which affected marine environment became the main player of marine environmental management.
* By changing the sea area utilization consultation system into environmental impact assessments, the study introduced strategic impact assessments and strengthened linkage to the public water occupation/ use permit procedures.
* Measures for better system operation capacity
* The study suggested changing the consultation target from activity unit to project unit. This will address overlapping consultations and induce comprehensive impact assessment. (15 activities were re-categorized into 9 projects.)
* It also proposed developing programs and work conditions which would boost capacity of consultation organizations and review organizations, the main players of the sea area utilization consultation system
* Measures for higher effectiveness of the consultation

system

* Instead of disposition organizations, business operators request sea area utilization consultation. This will strengthen responsibility of the results and follow-up management.



* Consultation procedures should be mandatorily implemented and review period needs to be improved. ‘A prior consultation system’ can be introduced as well.
* The role of disposition organizations and consultation organizations should be coordinated. Moreover, a system should be built in which business operators implement the consultation results. Then, implementation of consultation opinions can be intensified.
* The system for marine environmental impact assessment needs to be improved. For example, the reporting date of assessment reports should be adjusted. Post environmental impact assessment reports on target projects need to be notified to the consultation organizations. And lastly, marine environmental impact assessment should be discussed during consultation.

### Policy contribution

* The study reviewed identity of the sea area utilization consultation system and presented improvement measures for its effective operation and better functions.

– The sea area utilization consultation system has had overlapping and confusing problems. The study suggested detailed sectoral improvement measures, paving the groundwork for its constant development.

* The study proposed institutional improvement measures in a way to strengthen tools for marine environmental management of the Ministry of Oceans and Fisheries, the main player of marine environmental management.

### Expected benefits

* The study helps to develop marine environmental

management system.

– It organized connectivity between various environ- mental assessment systems in the field, such as sea area utilization consultation, sea area utilization

impact assessment and public water occupation/use permit and suggested direction for re-aligning the marine environmental review system.

– The study helps to enhance effectiveness of marine environmental management through development of environmental impact assessment system, a policy tool for marine environmental management.

* The study intensifies sustainable ocean use system.
* It contributes to improving management system of the ocean, one of public assets, by highlighting responsibility and role of each player in reasonable ocean use and conservation.
* Advanced assessment system of marine environment- which is a preemptive environmental management tool- will improve sustainability of the ocean.

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# Major Activities conducted in September, 2014

## 1. 2014 China Regional Logistics Seminar

* + Aim: China‘s New Silk Road Initiative In the Perspective of China‘s Logistics Market and Ways to Connect the Eurasian Initiative
  + Overview

### China Regional Logistics Workshop - Lianyungang

- Time & Place: September 22, 14:00~17:30, Four Point Hotel

* Topic: Korean Entrepreneur’s Market Expansion Using Trans China Railroad and Ways to Realize Eurasian Initiative

### China Regional Logistics Seminar-Zhengzhou

* Time & Place: September 24 14:00~17:50, Meridian Hotel
* Topic: China’s New Silk Road Initiative and Ways for Korean Entrepreneurs to Enter the China’s Domestic Logistics Market (e-Commerce)

# Major Activities planned in October, 2014

## Myanmar-East Timor Borderless Fish Farm Invitational Training Program

* + Time & Place: October 6 – 12, KMI
  + Department in Charge: Fisheries Policy Research Division

## The 8th Invited CEO’s Seminar on Shipping Market Conditions: Forecast for Shipping Market and Energy Issues

* + Time & Place: October 7, 07:00~09:30 Seoul Palace Hotel Grand Ballroom
  + Participants: KMI, Ministry of Maritime Affairs and Fisheries, CEOs of national shipping companies Event Overview: The annual breakfast meeting provides a ground where CEO’s of Korean shipping companies review the conditions of the shipping market and its current issues and opinions are shared among the industry, research and government.

## 「KMI Seminar on Regional Logistics in China」

* Time & Place: October 20, 13:30 ~ 17:30, Zhengzhou, Henan
* Major Contents: China’s New Silk Road Initiative and Ways for Korean Entrepreneurs to Venture into the China’s Domestic Logistics Market (e-Commerce)

Publisher

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