

# ***Toward Expanding Japan–Russia–China Multimodal Transportation***

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## **Introduction**

It would be no exaggeration to say that the economic relationship between Japan and China is the closest bilateral relationship in the world. However, within China's Northeast, which is geographically close to Japan, the relationship between Japan and the inland provinces of Jilin and Heilongjiang is comparatively weak. At present for Japan's trade with these areas, there is no alternative but to use a circuitous route via Dalian, Yingkou and other ports on the Bohai Sea. However, if the ports of Russia's Primorsky Krai are used, it will be possible to greatly shorten the distance to Japan from the eastern areas of both provinces (particularly to the ports on the Sea of Japan coast).

Suifenhe City, as well as being Heilongjiang's largest border city with Russia, is the nearest Chinese city to the major ports of the Russian Far East, including Vladivostok, and a strategic point for Northeast Asian regional transport. There are great expectations for it to become the starting point for a new short-cut route for distribution.

In the light of such conditions, in 2014 ERINA and the Suifenhe City People's Government carried out collaborative research aiming at expanding sea–land multimodal transportation. This paper, based on the collaborative research report, will introduce the key content thereof.<sup>1</sup>

## **1 The Background to the Collaborative Research**

### **(1) The Situation for Trade between China's Northeast Region and Japan**

Japan is an important export destination for China, and China has become the largest trading partner for Japan. Meanwhile, the following three distinguishing characteristics can be pointed out regarding the trade volumes with Japan of the Northeast region, which comprises Liaoning, Jilin and Heilongjiang Provinces.

The first of which is that the presence of the Northeast within Japan–China trade has on the whole been on the

decline. As shown in Table 1, while there was an increasing trend for the trade volumes with Japan of China's Northeast from 2000 on, its share of Japan–China trade went from 12.4% in 2000 to 7.3% in 2012 for exports, and from 7.6% in 2000 to 4.4% in 2012 for imports. This is due to Japan–China trade being concentrated in coastal areas, such as the Pearl River Delta, the Yangtze River Delta, and the Bohai Sea Rim.

Second, taking a look at the trade volumes with Japan of each of the Northeast provinces, it can be seen that Liaoning Province has a runaway lead. The 2012 export volumes to Japan of the Northeast stood at US\$11.23 billion, making up 14.3% of the total export volume for the Northeast, and was considerably higher than the national average level (7.4%). However, there is variance among the provinces, and Liaoning Province has many prominent figures. More specifically, as shown in Table 1, the 2012 export volumes to Japan for Liaoning Province stood at US\$10.13 billion, making up 17.5% of the province's total exports. In contrast, the respective export volumes to Japan for Jilin and Heilongjiang Provinces were limited, at US\$0.73 billion (12.3% of the total for Jilin Province) and US\$0.37 billion (2.6% of the total for Heilongjiang Province).

The third distinguishing characteristic, looking at the 2010 trade volumes with Japan for the Northeast by commodity, is that in contrast to Liaoning Province, where the share for "machinery and electrical goods" is great, Jilin and Heilongjiang Provinces center on primary products and their processed commodities, with examples being "animal and plant products" and "paper and timber products". In addition, direct investment into China's Northeast by Japanese firms is on the whole concentrated in Liaoning Province, and is still low in Jilin and Heilongjiang Provinces. That is to say, at the current stage, with the exception of the coastal city and processing trade export hub of Dalian, the industrial accumulation that can make best use of the strength of Japanese firms in the interior of

<sup>1</sup> The collaborative research report was published in March 2015 in Japanese. In addition, the collaborative research was conducted with the assistance of the Foundation for International Trade and Industrial Co-operation (ITIC). We would like to express our deep gratitude to that foundation.

**Table 1: The Changes in Trade Volume between China's Northeast and Japan**

	2000		2005		2010		2012	
	Export	Import	Export	Import	Export	Import	Export	Import
China total (million USD)	41,654	41,510	83,986	100,408	121,043	176,736	151,622	177,834
Share of Japan in China's Foreign Trade (%)	16.7	18.4	11.0	15.2	7.7	12.7	7.4	9.8
Liaoning province (million USD)	3,804	2,841	6,500	4,284	9,816	6,090	10,126	5,464
Share of Liaonin in China's Trade with Japan (%)	9.1	6.8	7.7	4.3	8.1	3.4	6.7	3.1
Share of Japan in Liaoning's Foreign Trade(%)	26.0	23.8	27.7	24.4	22.8	16.2	17.5	11.9
Jilin Province (million USD)	311	179	474	900	522	2,470	734	2,085
Share of Jilin in China's Trade with Japan (%)	0.7	0.4	0.6	0.9	0.4	1.4	0.5	1.2
Share of Japan in Jilin's Foreigh Trade (%)	14.4	4.5	19.2	22.2	11.7	20.0	12.3	11.2
Heilongjiang (million USD)	1,030	115	301	335	329	286	372	192
Share of HeilingJiang in China's Trade with Japan (%)	2.5	0.3	0.4	0.3	0.3	0.2	0.2	0.1
Share of Japan in Heilongjiang's Foreign Trade (%)	35.9	4.7	5.0	9.6	2.0	3.1	2.6	0.8

Sources: Compiled from "China Statistical Yearbook" 2013 edition, "Liaoning Statistical Yearbook" 2013 edition, "Jilin Statistical Yearbook" 2013 edition, "Heilongjiang Statistical Yearbook" 2013 edition, and China Customs Statistics Information (website) data

the Northeast is still insufficient. Consequently, although there is the potential to draw direct investment from Japanese firms inland as production areas and consumer markets, in reality things have not gone far enough in the construction of an adequate investment environment.

In light of the above, what can be pointed out first and foremost as necessary factors for the expansion of the two inland Northeast provinces' trade with Japan and for the attraction of investment from Japan is an improvement in the international distribution environment, which is inferior to that in Liaoning Province. For Heilongjiang Province in particular, what can be called the key to improving trade conditions and the investment environment is the establishment of international distribution routes which pass through its neighbor, Russia, and the increasing of their convenience of use. In that sense, multimodal transportation services via the ports of the Russian Far East, the principal subject of this collaborative research, is a factor that will greatly influence the future of the external economic activities of Heilongjiang Province.

## (2) Northeast Asian Transportation Corridors

With the aim of realizing the free movement of people and goods in the Northeast Asian region, in the past at ERINA we have undertaken collaborative research with researchers and administrators from the countries concerned (Transportation and Distribution Permanent Subcommittee, Northeast Asian Economic Conference Organizing Committee, 2002). The main outcomes were summarized in the "Vision for the Northeast Asia Transportation

Corridors", which determined nine routes as transportation corridors<sup>2</sup> for the various countries to develop jointly (Figure 1). The corridors have been designated on land only, but the connections by maritime transportation at the ports which are to be the points of departure and arrival have naturally been envisaged. Substantively, they can well be called proposals presuming the active use of multimodal transportation, which are transportation services combining land and sea transportation utilizing containers. In particular, if one focuses on the eastern halves of routes 3 and 4 on the map, they are routes which are responsible for sea–land multimodal transportation and both pass from China via Russia's Primorsky Krai, and connect up with the ROK and Japan, etc. While route 3, which crosses Heilongjiang Province, is called the "Suifenhe Transportation Corridor", and route 4, which crosses Jilin Province, the "Tumen River Transportation Corridor", on the Russian side they are regarded as sea–land multimodal

**Figure 1 : Northeast Asia Transportation Corridors**

<sup>2</sup> Transportation corridors are "aggregations of integrated transportation services by multiple transportation modes, which are responsible for transportation between fixed geographical points", and include not only the hardware of transport infrastructure, but also the software of transportation-related services and regulations. (ERINA ed., 2012, pp. 92–93)

transportation routes, and are referred to as “Primorye-1” and Primorye-2”, respectively.

Moreover, six of the transportation corridors shown in the “Vision for the Northeast Asia Transportation Corridors” (routes 2, 3, 4, 5, 8, and 9 on the map) are also being promoted within the framework of the Greater Tumen Initiative (GTI). The GTI is actively promoting cooperation in the transportation sector. After putting together an integrated research report (GTI, 2013) on the six transportation corridors in 2013,<sup>3</sup> the GTI has been pursuing the examination of ways to provide capital for infrastructure development and of “software” issues concerning crossing borders, and cooperation aimed at the realization of sea–land multimodal transportation. The research report on multimodal transportation published in 2014 (GTI, 2014) pointed out that in Northeast Asia, ferry routes in Japan Sea waters were rudimentary compared to those in the Yellow Sea. Additionally, as activation policies, it made proposals, including the reduction of transportation costs by local government subsidies, and improvement in the balance between inward and outward cargos.

### (3) The Significance of Multimodal Transportation via Russia

Here we shall corroborate the significance of the fact that sea–land multimodal transportation via Russia is continuing to be realized and expanded.

First, in terms of the societal significance, we raise the contribution toward the improvement of global environmental issues via a reduction in greenhouse gas emissions. The greatest distinguishing characteristic of these transportation routes is that the transportation distance is shorter than the routes via the Bohai Sea. Also, in respect of the relative distances of the land and sea transportation sections, the latter is the greater, which means that a shift is to be in progress toward means of transportation that have a low environmental burden, thus leading to a reduction in greenhouse gas emissions.

Next, from the standpoint of trading firms (consignor firms), there is the promise of the plus of cost reduction for logistics. What is promising first of all is indirect cost reduction by way of the reduction in the number of days for transportation. Then, if a certain volume of cargo is realized, economies of scale will come into play, and a direct reduction in costs is expected in the form of a lowering of shipping tariff levels.

For the local economies along the routes, including the departure, arrival and transit points, the vitalization of related industries and the invigoration of local economies are expected. It will open the way for an increase in business opportunities for not just the user manufacturing

industries and trading firms, but also the distribution industry and related service industries.

Among the multimodal transportation routes linking Japan and China via Russian Far East ports, the route with Suifenhe as its starting point on the Chinese side has a variety of advantages, as mentioned later in Section 2. The trailblazing initiative on this route is considered to be a test case for promoting the Vision for the Northeast Asia Transportation Corridors as a whole.

## 2 Multimodal Transportation Originating in Suifenhe

### (1) Overview of Suifenhe City

Suifenhe City is located in southeastern Heilongjiang Province. To the west it is 156km to Mudanjiang, and 460km to the provincial capital of Harbin. To the east it is 26km to Grodekovo Station in Russia, 120km to the Russian Far Eastern rail network hub of Ussuriysk, 230km to the Russian Far East’s key port of Vladivostok, and 369km to the Siberian Land Bridge arrival and departure port of Vostochny Port (Nakhodka).

In Suifenhe there are two national first-class ports of entry [goujia yi lei kou’an]: one rail and one road.<sup>4</sup> Currently it is number four among China’s border ports of entry in terms of freight volumes and passenger numbers. In the past several years the total volume of imports and exports transported for the Suifenhe ports of entry has comprised upward of 70% of the total for Heilongjiang’s 25 ports of entry, and upward of 50% of entering and departing passenger numbers.

In recent years sea–land multimodal transportation trials originating from Suifenhe have been rolled out, based on such strategies as China–Russia–elsewhere (China–Russian ports–third country) and China–Russia–China (China–Russian ports–coastal China). In November 1996, 960 tonnes of industrial coal departed from a Suifenhe port of entry, and after being transshipped to a freighter at Nakhodka in Russia was transported to Japan and the ROK. This was the first trial run. In the period 1996–2005 the freight volume for sea–land multimodal transportation which passed through the Suifenhe ports of entry topped 1.4 million tonnes.

### (2) The Current Situation for the Eastern Section of the Suifenhe Transportation Corridor

#### 1) The Ussuriysk–Grodekovo–Suifenhe Railway

This railway was built at the start of the twentieth century, and has already clocked up its first century. Of the 123km extent of the railway, approximately 6km are on the Chinese side, with the remainder on the Russian side. The whole line is divided into two sections.

The first section is the 26km Grodekovo–Suifenhe

<sup>3</sup> An outline of this was also introduced in “Special Feature: The Current Situation and Future Prospects for Northeast Asian Transportation Corridors” in ERINA Report No. 111 (2013).

<sup>4</sup> In China national border crossing points are referred to as ports of entry [kou’an].

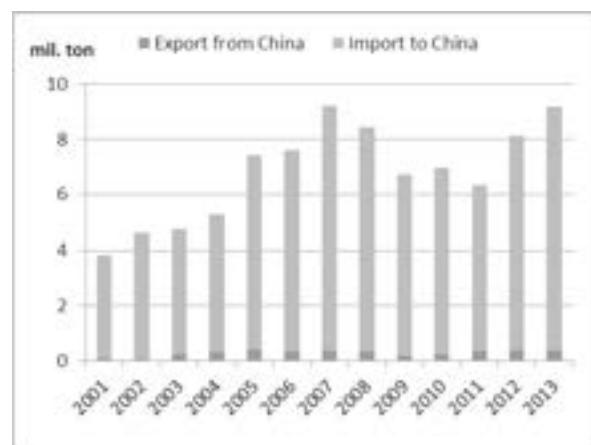
stretch. From its construction this section remained a second-class line in terms of development due to the relatively difficult terrain with many slopes and curves, in addition to the technical and financial constraints. In the 1950s, to meet the requirements of Sino-Soviet trade at that time, improvement work from "broad gauge" to "dual broad and standard gauge" was carried out. After completion of the upgrading work, both broad- and standard-gauge trains would be able to run on the line, but it was in actuality a single-track line, and its annual transportation capacity remained limited to 7 million tonnes (one-way). At this time, this section is the one closest to the limit of its capacity among the railway lines crossing the border between China and Russia.

The second section is the 97km Ussuriysk–Grodekovo stretch, and its transportation capacity has grown to 15 million tonnes annually. Once having passed through the mountainous terrain of the Sino-Russian border, the landscape becomes relatively flat, and the degree of technical difficulty in upgrading this section can be described as comparatively low.

### 2) Suifenhe Station International Freight Traffic

The trends in Suifenhe Station international freight traffic are as shown in Figure 2. The overwhelmingly large volume of imports from Russia into China has been continuous. The main commodities include lumber and coal. There are many years which have recorded transportation figures exceeding 7 million tonnes annually, the regular annual transportation capacity, and this suggests some artful management in operations.

**Figure 2: Suifenhe Station International Freight Traffic**



Source: Compiled from "Yearbook of China Transportation and Communications", editions for each year

### 3) Construction Work Proposals to Increase Rail Transportation Capacity

The shortfall in capacity for the Suifenhe–Grodekovo stretch has become a bottleneck for the Suifenhe Transportation Corridor. Consequently a large-scale expansion of the railway for this section and modification work to increase speed will be necessary. At the present

time the following two proposals are envisaged.

#### Proposal A: Separation of the Broad and Standard Gauges

This is a plan to separate the existing combined track into one broad- and one standard-gauge track. The existing combined broad- and standard-gauge track is in reality used as a single-track. If the gradient isn't reduced and there is no improvement in longitudinal gradient, then the current annual one-way transportation capacity (approximately 7 million tonnes) will approach its limit. The total cost of work for Proposal A is likely to be approximately 350 million yuan.

#### Proposal B: Construction of a New Broad-Gauge Track

The basic framework for Proposal B is not to carry out the work to separate the existing combined broad- and standard-gauge tracks, but to newly construct another broad-gauge track. If a new broad-gauge line is added to the existing combined track the overall transportation capacity will reach 20–25 million tonnes. In addition, if the technological level of part of the new broad-gauge line is raised, it will be able to satisfy the international transportation requirements of around 2020. The total cost of work for Proposal B is likely to be approximately 450 million yuan.

Still further, in response to the future expansion of demand, if the existing combined lines are divided between one broad- and one standard-gauge track, with a pair of broad-gauge lines and one standard-gauge line resulting, then the annual transportation capacity will reach 40–50 million tonnes. In addition to this, it will be necessary to harmonize the standards for maximum gradient and minimum curves on this section with those for the main line railways to the ports of Vladivostok and Vostochny.

### 4) The Deficiencies and Excesses in Transshipment Capacity at Border Stations

In freight transport between the Sino-Russian border railways, in principle freight is transported as far as the border station of the other country by train from the exporting country, and the transshipment of the freight is undertaken there. The deficiencies and excesses in the capacity of this transshipment have become a problem.

Taking a look at the balance in the imports and exports on the Russian side, exported freight is overwhelmingly great, and the transshipment capacity at the Russian border station of Grodekovo is underutilized. While large-scale facilities for the transshipment of imports of foodstuffs and coal from the Chinese side have been put in place, they have been idle for a long time. Consequently, with a sense of pursuing its own interests, the Russian side is hoping for a continual expansion of Chinese export freight.

Suifenhe Station yard is divided between two places, north and south. The carriage-interchange operation at the station is fairly complicated, and the problem of lack of capacity is further revealed via the mutual interference. The southern yard is situated in the southeast of Suifenhe City,

and while there are 14 north–south sorting tracks, because they are surrounding by built-up areas there is little room for expansion of capacity. The north yard is situated in the west in the downtown area, there are 11 east–west sorting tracks, and the topography is relatively spacious. However, as the adaptable services are limited, they are already saturated and in excess of capacity, and the related construction work for expansion is urgent.

Currently, in addition to the expansion of sorting tracks for arrivals and departures, putting together of trains, and transshipment, and the putting in place of facilities related to carriages and cargo-handling machinery, a broad adjustment of the yards' available area and sorting operations is being carried out. However, as the yards' design capacity is small, they continue to not keep up with the expansion of freight transportation volumes and long-term growth. Therefore, in the future expansion work for the railway station will be necessary, matching the railway improvement work. Specifically, first they will adjust the yards' layout and division of operations. Next, it is thought that at the same time as undertaking the expansion and extension of sorting tracks, they will enhance the unloading facilities, and raise the processing capacity to 35–50 million tonnes. In the case of part of the yards getting newly-installed facilities, the investment is likely to be approximately 1 billion yuan.

### (3) The Regular Shipping Services of Russia's Primorsky Krai Ports

The regular shipping services from Primorsky Krai play a key role in the sea–land multimodal transportation originating in Suifenhe. Here, we would like to summarize the services which Japanese arriving and departing freight will be able to utilize primarily.

#### 1) JTSL (Japan Trans-Siberia Line)

This is a regular shipping service jointly operated by FESCO of Russia and Mitsui O.S.K. Lines of Japan. The way ports on the Russian side are Vladivostok Port and Vostochny Port, and on the Japanese side Tomakomai, Yokohama, Nagoya, Kobe, Moji, and Toyama (Figure 3, fine line). One ship is in service, and has a schedule of visiting each way port once a fortnight. In order to compensate for the low frequency of services to way ports, there is also a Busan transshipment transportation service, and both together provide a practically weekly service.

The weak point is the large number of days for transportation. A two-day transport is possible only for Tomakomai, the first way port for the Japan-bound service, and Toyama, the last way port for the Russia-bound service, and is one-way in both cases. For the other way ports the number of days for transportation is from four days to a week.

#### 2) DBS Ferry

The ROK shipping firm DBS Cruise Ferry operates a regular Vladivostok–Donghae (ROK)–Sakaiminato

(Tottori, Japan) ferry service (freight and passenger) (Figure 3, bold line). It has a schedule of one day between Vladivostok and Donghae, and two days between Vladivostok and Sakaiminato, and scores highly in terms of its speediness. In addition, because it also transports passengers, the high stability of regular services holds appeal.

This is a shipping service with the promise of being a powerful transportation route in the expansion of China–Russia–Japan/ROK multimodal transportation.

#### 3) Busan Transshipment

Besides the above, Busan transshipment services are often used in container freight transportation between Russia's Primorsky Krai and Japan. At Vladivostok Port and Vostochny Port, a number of domestic and overseas shipping firms operate regular container shipping services to Busan Port. In addition, more than 60 Japanese domestic ports are linked with Busan Port by regular container shipping services of upward of one per week. Therefore, they are services which many areas within Japan are able to use. As mentioned later, in the transportation experiments implemented within the framework of the collaborative research here also, there was transportation to Osaka and Nagoya utilizing Busan transshipment services.

The weak point of Busan transshipment services is the large number of days for transportation, and there can be instances where it takes a fortnight at the longest.

#### 4) The Cross-Japan Sea Shipping Route

Centered on Niigata Prefecture, the City of Niigata, and the local economic community, efforts have been continued for the establishment and expansion of use of a "Cross-Japan Sea Shipping Route" connecting the Port of Niigata with the Russian Far East.

This shipping route was established in August 2011 as a shipping route utilizing a conventional freighter between the Port of Niigata and the Port of Zarubino. However, the situation continues of freight transportation having actually ceased, due to a variety of technical problems.

In order to overcome this situation, in Niigata Prefecture, etc., they are furthering various preparations, including allocating a relevant budget in the fiscal year 2015 budget, in the direction of developing transportation services combining passenger transport, procuring a new freight and passenger ferry. In concert with the beginning of the new service, it is planned to also have Vladivostok as a way port, and not just the Port of Zarubino (Figure 3, dashed line). Therefore, if this service is commenced, there is the promise of it being a powerful shipping route for sea–land multimodal transportation originating in Suifenhe, in similar fashion to the abovementioned DBS Ferry shipping route.

#### (4) The Development of Related Policy

The Xi Jinping administration advocated the concept of "One Belt, One Road" in 2013 (Silk Road economic belt

**Figure 3: Regular Shipping Services between Russia's Primorsky Krai and Japan**



Source: Produced at ERINA

and 21st century Silk Road) as a new development in its diplomacy with neighboring countries.

Connected to this “One Belt, One Road” concept, in order to promote the extension to the east of the westward-running land Silk Road, at the end of 2014 Heilongjiang Province created the concept of “The Eastern Sea–Land Silk Road Economic Belt”. This concept is raised as a centerpiece for the promotion of Heilongjiang Province’s economic cooperation with Northeast Asia, and in particular the most important part is the putting in place and managing of the “Harbin–Suifenhe–Russian Far East Ports–Third Country, including Japan and the ROK” multimodal transportation.

From the aspect of international cooperation, prior to the starting-up of the “One Belt, One Road” policy, in the discussions among the four governments of China, Japan, the ROK, and Russia that were held in Harbin in December 2012, persons related to government, research institutions and businesses came together in one place, and shared the recognition that they should continue sustaining and developing Suifenhe as an important Japan Sea Rim sea-land multimodal transportation route.

In addition, on 20 August 2014, Harbin Railway Bureau in China and Russian Far East Railways held talks in Suifenhe, and undertook negotiations on rail transportation fees for containers, and cargo such as fruit and vegetables. The outcomes were as follows.

First, for exports from the Chinese side to Russia and also transit container freight, they will be able to load directly onto Russian carriages at Suifenhe Station, and without it being necessary to transship at Grodekovo Station they will be able to get a reduction and exemption of transshipment fees.

Second, Russian Far East Railways will provide thermally-insulated carriages to fruit and vegetable firms on the Chinese side. In October they assigned thermally-insulated carriages from the Russian side to Suifenhe Station and transshipped fruit and vegetables, and without it being necessary to tranship at Grodekovo Station in Russia they were able to get a reduction and exemption of transshipment fees.

Third, if transit container freight can be transported on a commercial basis, it is planned that the Russian side will implement a lowering of transportation prices. More specifically, in the case of container block trains (composed of 57 40-foot containers) originating at Grodekovo Station, a 50% reduction in the freight fee will be applied, and in the case of single trains (5 to 8 40-foot containers), a reduction of 30% in the railway fee will be applied.

Fourth, in the case of transporting Russian-produced sawdust from Russia's Komsomolsk-na-Amure (Khabarovsk Krai) and Dalnerechensk (Primorsky Krai) to Suifenhe Station, if a certain level of transport volume can be secured, a 20% reduction in the railway fee on the Russian side will be applied, based on the consultations of both China and Russia.

What is particularly important among these for multimodal transportation is agreement on the first and third items. These will lead to reduction in transportation time and cost.

#### (5) The Advantages of Suifenhe as a Point of Origin: A comparison with the other ports of entry in the Northeast region

The specific advantages of the Suifenhe ports of entry are as follows.

First, the geographical scope of the target transportation services is broad. Suifenhe ports of entry, as gateways via the sea to within and without China, are developing transportation operations, other than for Heilongjiang domestically, for the connected provinces and areas of the Northeast and North China (Huabei). Overseas, it is broadening the transportation scope to not just the Russian Far East, but via Vladivostok directly to Japan, the ROK, and the countries of the Asia-Pacific region.

Second, the transportation distance is short. If the Heilongjiang provincial capital of Harbin is taken as a departure point, it is 929km to Dalian Port, and 768km to Vladivostok via Suifenhe (Table 2).

By means of transporting China's inland freight via Suifenhe and from Russian Far East ports to all parts of the world, an advantage arises in the transportation distance. For example, in the case of transporting freight originating in Harbin to Busan Port in the ROK, going via a Russian Far East port the distance can be made approximately 200km shorter than via Dalian, and in the case of transportation as far as the Port of Niigata approximately 1,600km shorter (Table 3). Calculating for a route from the

**Table 2: The Transportation Distances from Various Areas of Heilongjiang Province to Shipping Ports**  
(Unit: km)

	Qiqihar	Harbin	Mudanjiang	Port Name
Suifenhe Route	1,038 (1,083)	768 (738)	413 (399)	Vladivostok (Russia)
Tumen Route	1,032 (1,168)	762 (823)	407 (455)	Rajin (DPRK)
Dalian Route	1,157 (1,345)	929 (1,000)	1,277 (1,339)	Dalian (China)

Note: The figures outside the parentheses are for the distance by rail, those within are by road.

Source: Compiled by the People's Government of Suifenhe City from a variety of materials.

**Table 3: The Transportation Distances from Various Areas of Heilongjiang Province to Various Ports by Route Used**  
(Unit: km)

Port Name	Qiqihar			Harbin			Mudanjiang		
	Vladivostok	Rajin	Dalian	Vladivostok	Rajin	Dalian	Vladivostok	Rajin	Dalian
Busan	1,981	1,959	2,163	1,711	1,689	1,935	1,356	1,334	2,283
Niigata	1,870	1,930	3,443	1,600	1,660	3,215	1,245	1,305	3,513
Yokohama	2,771	2,972	3,469	2,501	2,702	3,241	2,146	2,343	3,539
Hong Kong	3,668	4,032	3,486	3,418	3,762	3,258	3,063	3,407	3,556
Singapore	6,088	6,573	6,002	5,818	6,303	5,774	5,463	5,948	6,972
Seattle	8,739	8,742	10,614	8,469	8,522	10,386	8,114	8,138	10,684

Source: Compiled by the People's Government of Suifenhe City from a variety of materials

eastern part of Heilongjiang Province, that difference becomes even greater. In the case of transporting freight originating in Mudanjiang to Busan Port in the ROK, going via a Russian Far East port the distance can be made approximately 900km shorter than via Dalian, and in the case of transportation as far as the Port of Niigata approximately 2,300km shorter. Furthermore, in the case of going from Mudanjiang to Shanghai and Guangzhou via Suifenhe and Vladivostok, the distances can be made approximately 820km and 1,100km shorter, respectively, than via road haulage.

Third, the freight-handling capacity of this route is high. The Suifenhe ports of entry are linked to the main trunk lines of the Binsui (Harbin–Suifenhe) and Binzhou (Harbin–Manzhouli) Railways and the Suiman (Suifenhe–Manzhouli) Expressway. The Binzhou and Binsui lines are the most important transverse arterial rail lines in China's Northeast, and aiming toward the creation of multiple tracks along their total current extents, construction work is underway on the remaining single-track sections. If construction work is completed as planned at the end of 2015, the annual freight-handling capacity will reach approximately 50 million tonnes. Moreover, work began on the Mudanjiang–Harbin passenger rail line on 15 December 2014, and they aim for it to be open within four years. The Suiman Expressway too, as an important component of China's main road arteries, connects four major cities of

Heilongjiang Province (Harbin, Qiqihar, Mudanjiang, and Daqing) and is being extended in the west to the eastern part of Inner Mongolia.

Fourth, the geographical circumstances of the ports are good. Vladivostok Port, Nakhodka Port and Vostochny Port are major ports in the Russian Far East, and the distances to Suifenhe are approximately 200–400km.

#### (6) Summary

In summarizing the abovementioned matters, it may be said that the conditions for the expansion of sea–land multimodal transportation via the Russian Far East and originating in Suifenhe are being put into place as follows.

Within both China itself and with the countries concerned, policy has been hammered out to provide a tailwind for the expansion of sea–land multimodal transportation on this route, and the related institutions have been continuing their efforts to that end.

While the constraints in hard infrastructure, such as the cross-border rail transportation capacity, still remain as in the past, several infrastructure development projects are underway, such as in China domestically, including Suifenhe Station.

This route holds great appeal in the transportation distance and the reduction in the number of days required, and the conditions for reduction in that number of days have further improved. The operations for transshipping

container freight originating in Suifenhe at Grodekovo Station were left out of the 2014 Sino-Russian agreement. In the case where trains are not recomposed at Ussuriysk Station, it is calculated that transportation is possible within 24 hours from Suifenhe to the ports of Russia's Primorsky Krai. On the maritime leg there are direct services to Japan which arrive in two days. If these timings can be deftly coordinated to be mutually connecting, then in numerical terms there is the potential of being able to realize "transportation to Japan in four days".

While the achievements in transportation to date are all strongly experimental in character, through them a certain accumulation of knowhow has taken shape. For this reason, such matters as the preparation for transportation and various procedural formalities have come to be performed smoothly. This fact is a positive point, and in the next section we would like to demonstrate it via specific case examples.

### **3 The Insights Gained from Transportation Experiments**

#### **(1) The Transportation Experiment Executed in This Collaborative Research**

When executing this collaborative research, in order to ascertain the practicality and challenges for sea-land multimodal transportation via Russia, the People's Government of Suifenhe City and ERINA opted for carrying out a transportation experiment which used container freight. From around June 2014 they substantiated the selection process for the consignor firms to participate in the experiments, and carried out transport from the end of July and into August. Below, we will summarize the outline of the experiment and the points which became evident thereby.

##### **1) Outline of the Experiment**

In this transportation experiment, we transported two

40-foot containers from Suifenhe to Japan. In Suifenhe and its environs there are firms which import untreated timber from Russia and fabricate a variety of wooden products, and export them overseas, including to Japan. Ordinarily, these products are exported to Japan via Dalian Port in Liaoning Province, but this time they were transported via Vostochny Port in Russia's Primorsky Krai. One of the two containers carried disposable chopsticks, the other laminated wood.

The People's Government of Suifenhe City took the lead and constructed the execution scheme for the operation of the transportation experiment. First, the Heilongjiang Sea-Land Route International Cargo Company (Suifenhe City)<sup>5</sup> (hereinafter the Sea-Land International Cargo Company) and Suifenhe Lihua Ltd. (Suifenhe City) (hereinafter Lihua Ltd.) became the operators which took overall control. The Sea-Land International Cargo Company is a forwarder undertaking contact arrangement operations with domestic and overseas transport-related operators, and Lihua Ltd. is a firm undertaking consolidated operations putting together container freight for multiple consignors on the Chinese side. It was possible to find exporting consignors to cooperate in the transportation experiment via the human networks which both possess. Also, the firm which the Sea-Land International Cargo Company used for the transportation arrangements in Russia was Port May (Vladivostok), a private limited company which is a local forwarding firm. The firm undertakes booking arrangements with Russian Railways and CMA-CGM (a French ship firm).

The container transportation routes and schedules are as shown in Figure 4 and Table 4. The number of days from departure from Suifenhe Station to arrival in the Japanese ports was 16–17 days. As the loading cargo item of container B being changed immediately prior to the start of

**Figure 4: Map of the Container Transportation Routes**



Source: Produced at ERINA

<sup>5</sup> The company name at the time of writing this report. At the time of the execution of the transportation experiment it participated in operations using the name of the parent company, Shanglian Jituan.

**Table 4: The Schedules for Executing the Transportation Experiment**

Schedule Item	Date of Execution	
	Container A	Container B
Forwarding of empty containers to Suifenhe		21 July
Loading of freight into containers at Suifenhe		26 July
Customs clearance at Suifenhe	27 July	30 July
Dispatching from Suifenhe Station	28 July	30 July
Arrival at Grodekovo (border station on the Russian side)	29 July	31 July
Customs clearance at Grodekovo	29 July	31 July
Transshipment operations at Grodekovo Station (Note 1)	29 July	31 July
Departure from Grodekovo Station	29 July	31 July
Arrival at Ussuriysk Station (Note 2)	29 July	31 July
Departure from Ussuriysk Station	30 July	1 August
Arrival at Vostochny Port	31 July	4 August
Customs clearance at Vostochny Port	1 August	5 August
Loading onto ship at Vostochny Port	5 August	5 August
Departure from Vostochny Port (encountered first typhoon)	6 August	6 August
Arrival at Busan Port	12 August	12 August
Departure from Busan Port	12 August	12 August
(encountered second typhoon)		
Arrival at Osaka Port	14 August	
Arrival at Nagoya Port		15 August

Note 1: As the railway track gauges differ in China and Russia, transshipment is necessary.

Note 2: Ussuriysk Station is the intersection between the mainline of the Trans-Siberian Railway and the branch line to Suifenhe. The operations to reconfigure trains are undertaken here.

Source: Produced at ERINA.

the experiment, departure was delayed due to time being needed for preparing the necessary documentation for customs clearance procedures, but it was able to be loaded onto the same ship as container A at Vostochny Port. In addition, as typhoons struck during the maritime transportation, the maritime transportation took more days than originally planned.

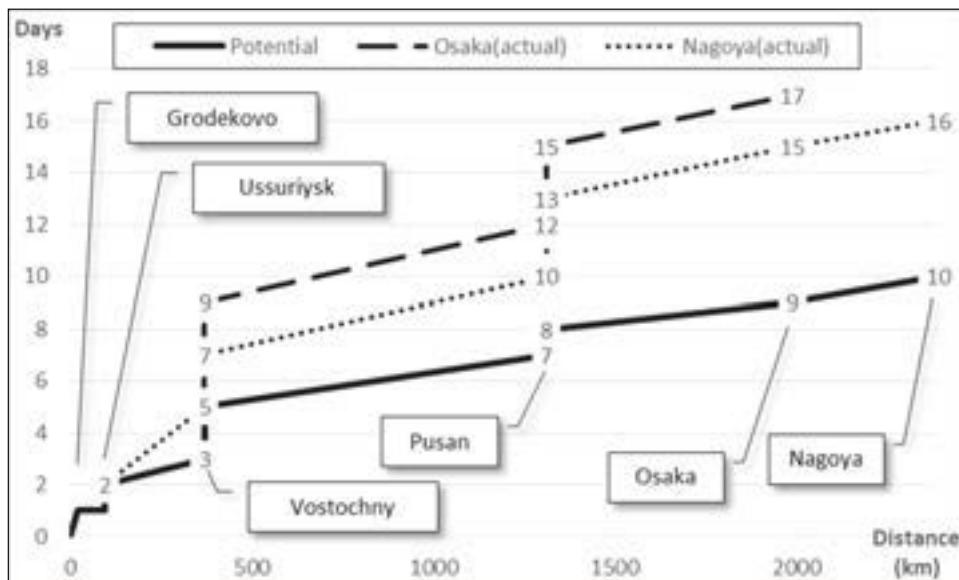
The fees required for the transportation per container (from the shipping factory to the port of discharge) was a total of approximately 15,000 yuan (approximately US\$2,500), with a result of the cost becoming 5,000 yuan (approximately US\$800) more expensive compared with the usual route via Dalian (approximately 10,000 yuan ≈

US\$1,700).

## 2) The Matters Made Evident through the Experiment

We bring together the following four points which were made evident through this experiment.

First, by using the sea–land multimodal transportation route via Primorsky Krai in Russia, it was shown that the potential is great for reducing the number of days for transportation. This time around, considering the uncertainty about the number of days required for crossing the China–Russia border and transportation within Russia, the shipment was made with leeway for the number of days up to loading onto the ship. In addition, as mentioned earlier, there was the influence of typhoons during the

**Figure 5: The Number of Days for Transportation from Suifenhe**

Source: Produced at ERINA

transportation. Taking these factors into consideration, assuming the case of the shortest transportation time on this route, it can be calculated that transportation can be made in nine days to Osaka and ten days to Nagoya (Figure 5). Furthermore, in the case this time around, the ports of destination were on the Pacific Ocean side, and transshipment was carried out at Busan Port on the way, but if a direct shipping route is used to ports on the Sea of Japan side a further reduction in the number of days is possible.

Second, it was shown that the formalities for crossing the border (customs clearance), involved in the transit transportation passing through Russia, can be handled smoothly. Here the contribution of Port May, the company on the Russian side, was great. Regarding the production of documents for presenting at Russian customs, it visited Suifenhe City and undertook meticulous meetings with Lihua Ltd., etc., on the Chinese side, and was able to arrange all the necessary documents prior to the containers departing. That border customs clearance when both entering and leaving Russia was handled smoothly is down to this advanced preparation.

This time around the departure from China of one of the two containers was delayed. The initially planned consignor company on the Chinese side showed reluctance at the last minute for transportation via Primorsky Krai in Russia, and this accompanied the changeover to an alternative cargo. The hastily loaded export freight was something which required special documentation for Chinese export formalities, and required a few days for the confirmation of the necessary documents and their arrangement. In fact, in the case of the usual export via Dalian, a Dalian business

handles the export clerical work, and it was unfortunate that the accumulation of knowhow in Suifenhe is tenuous. The knowledge which persons connected to Suifenhe gained via the transportation experiment this time around is considered useful for future development.

Third, it was shown that in the transportation utilizing the railways, transportation of a sufficiently short time could be realized. In fact, in Russia, other than the specialized container trains called "block trains", it is generally the case that trains are reconfigured at a station on the way. This causes the loss of a great amount of time, and becomes a factor which heightens uncertainty about the transportation time. This time around also reconfiguration of trains was carried out in Ussuriysk, but as the coordination with Russian Railways had been carried out in advance there ended up being a time loss of just under one day. In an interview with the station manager at Grodekovo, there was a sense that Russian Railways had an attitude of seriously taking the initiative for the realizing of smooth transportation.

Fourth, the way was opened for the use of containers owned by ship firms. As there is no ship firm container hub in the interior areas of China such as Suifenhe, the arranging of empty containers is not easy. This time around the French ship company CMA-CGM, which has a business base at Vostochny Port, showed interest in freight transportation in the Chinese interior, and forwarded empty containers from Vostochny Port.

## (2) Other Transportation Experiments

This subsection introduces the case examples of transportation experiments for international multimodal

transportation via Russian ports. These primarily transported freight arriving in and departing from Heilongjiang Province, but also include in part case examples which transported freight arriving in and departing from Jilin Province.

#### 1) The Transportation Experiments Executed by Tottori Prefecture

The ROK ship firm DBS Cruise Ferry operates a once-weekly regular ferry service between Sakai Port in Japan and Vladivostok Port in Russia. The route of the service is Sakai Port (Tottori Prefecture, Japan)–Donghae (Gangwon Province, ROK)–Vladivostok (Primorsky Krai, Russia). Within it the volume of freight transported between Sakai Port and Vladivostok is growing at a sluggish pace, and its expansion has become an issue.

In such circumstances, in order to develop DBS ferry freight, Tottori Prefecture executed international multimodal transportation trials between northeastern China and Tottori Prefecture in 2011 and 2012 (Table 5).<sup>6</sup>

The 2011 trial transportations were executed taking Mudanjiang City in Heilongjiang Province and Changchun City in Jilin Province as arrival and departure points. Regarding the transportation to Jilin Province of those, they undertook a round-trip transportation, using one 20-foot container for carrying in and carrying out articles for display at the China Jilin–Northeast Asia Investment and Trade Expo held in Changchun. Also, for the transportation to Heilongjiang Province they undertook transportation using two 20-foot containers in order to import disposable chopsticks into Japan which were produced in Mudanjiang. For the land transportation in both cases they used the companies of Primoravtotrans within Russia and Wanli Logistics within China. There are no other firms which are capable of bonded transportation by truck, and as they have a monopoly, the land haulage fees in Russia ended up being expensive. In the case of Jilin Province, the land transportation fees were 13–16% higher compared with the

competing route via Dalian Port.

What can be raised as issues other than this, in the event of the transportation of the Heilongjiang Province freight, are that they had no choice but to use two 20-foot containers, not one 40-foot container, because of the limitation of the crane load at Vladivostok Port Ferry Terminal and the weight restriction (a total weight of 40 tonnes) when crossing the China–Russia border, and that it cost time, effort and money for arranging empty containers. As a result, in the case of freight transportation from Heilongjiang Province the total transportation expenses came to approximately twice those for the route via Dalian Port.

In the 2012 trial they transported food items to Yanji in Jilin Province from Japan. On this occasion, on top of 17 days being required for quarantine procedures at Suifenhe customs, they completed the customs clearance procedures in the end, with bonded transportation to Yanji. It took time for handling due to it being the first experience for Suifenhe customs and transportation operators on the Chinese side for the multinational transportation of Japanese food items. In addition, from Sakaiminato to Vladivostok Port it was two days, following the schedule, and the freight arrived at Suifenhe customs from Vladivostok Port in five days.

#### 2) The Transportation Experiment Executed by Niigata Prefecture

Niigata Prefecture aimed at the establishment of a service connecting the Port of Niigata with the Port of Zarubino in Russia's Primorsky Krai.

With the objective of demonstrating the effectiveness of this route with an actual example, Niigata Prefecture executed an international multimodal transportation experiment for container freight in October 2010.<sup>7</sup> This transportation experiment verified the lead time and transportation costs, etc., concerning the route via the Port of Zarubino, and executed the investigating of measures for the realization of new distribution routes as an objective.

**Table 5: Outline of the Transportation Experiments Executed by Tottori Prefecture**

Transportation Route	Transported Items	Time Period
Sakaiminato↔(DBS)↔Vladivostok↔(truck)↔Suifenhe↔(truck)↔Changchun	Self-assembly tables [China→Japan] Pamphlets [Japan→China] Delineators [both ways]	August–September 2011
Mudanjiang→(truck)→Suifenhe→(truck)→Vladivostok→(DBS)→Sakaiminato	Disposable chopsticks	November 2011
Sakaiminato→(DBS)→Vladivostok→(truck)→Suifenhe→(truck)→Yanji	Food items	July–August 2012

Source: Produced from information provided by Tottori Prefectural Office

<sup>6</sup> The following content is from information provided by Tottori Prefectural Office.

<sup>7</sup> The following content of this subsection is from ERINA (ed.) (2012), pp. 116–118.

They transported sundry household goods and clothing using one 20-foot container apiece. The freight departed from the places of origin of Harbin in Heilongjiang Province and Hunchun in Jilin Province, and after the containers were packed in Hunchun they passed through China's and Russia's border customs clearance, and they undertook truck transportation to the Port of Zarubino. From the Port of Zarubino to the Port of Niigata the containers were transported by a chartered freighter, which made a call at Nakhodka Port. From the Port of Niigata to the places of destination within Japan they were transported using the railways, etc.

From Harbin in Heilongjiang Province to the Port of Niigata the transportation distance is ordinarily approximately 3,000km via Dalian Port. In contrast to this, the transportation experiment, by using the abovementioned route, reduced the transportation distance outside Japan by 40%, approximately 1,300km.

Niigata Prefecture summarized the results of the experiment as follows.

(1) The actual lead time for transportation, cargo handling operations, and inspection was in the order of six days. In contrast to the route via Dalian Port which takes more than ten days, it became clear that the route via the Port of Zarubino has the advantage. It is considered that via the improving of the convenience of customs clearance procedures at the Port of Zarubino and of Japan's rail freight network, etc., a further reduction of the lead time is possible. With infrastructure development progressing, a yet further time reduction is to be expected.

(2) The cost of transportation, in comparison with the route via Dalian Port, was approximately 100,000 yen more expensive per TEU.

(3) The customs clearance procedures were more or less completed smoothly. The customs clearance inspection at the Port of Zarubino and the applicable inspection under the "Act on Temporary Measures concerning Customs" for the clothing at the Port of Niigata required more than ten hours, owing to them both being first-time inspections. Regarding the latter, procedures were necessary for changing the freight-unloading port from Nagoya Port, used until that time, over to the Port of Niigata for the first time, and will be unnecessary from the second time on.

Besides the above, several issues have been made clear for the construction of full-fledged distribution routes. The example can be raised that the issuing of permits at the time vehicles cross the China–Russia border has been restricted to 60,000 per year. In addition, the raising of the cargo-handling capacity of the cranes at the Port of Zarubino which currently deal with a maximum of ten tonnes, the

expansion of the container yard, and the promotion of the development of transport infrastructure between China and Russia are necessary. Furthermore, while it didn't occur in the experiments this time around, there might be the case of the Chinese customs seals, from the time of loading the container, being opened at Russian customs, which raises the issue of a through bill of lading not being able to be issued for transport operators to guarantee the safety of freight to the final destination. However, there is also talk of Chinese and Russian government-related institutions, etc., making efforts aimed at improvements, and it is expected improvements will be made as soon as possible.

Based on the above results, the conclusion has been drawn that the route via the Port of Zarubino, linking northeastern China and Japan with a shortcut, is a promising one as a new distribution route for Niigata Prefecture.

### 3) The Transportation Experiment Executed by Huasheng Guoyun Logistics Ltd.

In autumn 2007, Huasheng Guoyun Logistics Ltd. (Mudanjiang, Heilongjiang Province) executed container transportation on the Mudanjiang–Suifenhe–Vladivostok–Shanghai route.<sup>8</sup> This transported Chinese domestic freight via Russia, and attempted a reduction in distance of 700km. Twelve containers laden with paper, etc., departed Mudanjiang on 26 September, were transported to the container terminal of Vladivostok Sea Fishing Port by rail transportation, and then to Shanghai on a Chinese ship. A total of 23 days were required, including that on the way they were held up for seven days with the time taken for the arrangement of Russian railway freight cars for the transshipment at Grodekovo.

In the sense of the container transportation having actually been realized, the experiment was successful, and in respect of the total number of days and costs for transportation, they still have not yet reached a practicable range. There is also the issue of the coordination between China and Russia likely being difficult, including transportation fees.

### 4) The Transportation Experiment Executed by OCDI

In February–April 2007, the Overseas Coastal Area Development Institute of Japan (OCDI; in Tokyo) undertook a transportation experiment from Sakata Port in Yamagata Prefecture via Russia to Harbin in Heilongjiang Province.<sup>9</sup>

They transported container freight loaded with an agricultural combine harvester on the Sakata Port–Busan Port–Vostochny Port–Grodekovo–Suifenhe–Harbin route. They used the railways for the transportation from Vostochny Port to Harbin. The transportation from Sakata to Harbin required 65 days. Within that, it required 59 days

<sup>8</sup> The content of this paragraph is primarily from the presentations of persons in charge at the Department of Commerce of Heilongjiang Province at the "2008 Japan–China Economic Cooperation Conference in Niigata City" and a fact-finding interview with Mr. Viktor Popov, Deputy General Director of the Vladivostokvnestrans Forwarding Co. on 25 July 2008.

<sup>9</sup> The content of this subsection is from Katsuhito Saka (2007).

from Busan to Harbin alone, and in particular 28 days at Vostochny Port. Time was required for such things as transit freight customs clearance procedures, consolidation and reinforcement of the container, and train reconfiguration.

At OCDI, as the results of this transportation experiment, the conclusion has been drawn that to make the route practical the resolution of such formalities and technical issues, and in addition, a reduction in the transportation costs which came to approximately ¥850,000, are necessary.

#### 5) “China–Russia–China” Transportation Experiments

To the end of 2014, two so-called “China–Russia–China” transportation experiments were executed, transporting on the Northeast China–Russian Far East ports–China coastal areas route.

First, on 30 November 2014, medium density fiberboard (MDF), for which China Railway International Forwarding Co., Ltd. arranged the transportation, was dispatched from Suifenhe port of entry. After it arrived in Shanghai, via Vostochny Port in Russia, it was ultimately transported to Changzhou in Jiangsu Province. It could be confirmed that both the transportation distance and time had the advantage, compared to going via Dalian Port (or via Yingkou Port).

In addition, on 23 December 2014 containers, for which the Sea–Land International Cargo Company arranged the transportation, were loaded with floorboard material and dispatched from Suifenhe. They were transported to Huangpu Port in Guangdong Province via Vostochny Port in Russia. The 24 containers transported on this occasion were all 40-foot containers, and the commodities were all manufactured by timber firms in Suifenhe, and were primarily maple veneer for flooring and boards of Scots pine.

The latter transportation experiment is the largest scale “China–Russia–China” transportation experiment, which Suifenhe executed in 2014. Until this, the majority of freight which was transported to southern Chinese ports had in most cases used Dalian Port or Yingkou Port. The transportation time was approximately 15–17 days, and it is widely held that a lowering of fees will be difficult.

Through the several occasions of transportation experiments to date, it was possible to confirm that in transporting via Vostochny Port in Russia from Suifenhe, the transportation time was able to be reduced by approximately 5–10 days, and the fees per container by approximately 10% (1,000 yuan), in comparison to via Dalian Port. It can be said that such reductions in transportation costs and time will be positive findings as far as consignor firms are concerned.

### 4 The Impediments to the Expansion of Multimodal Transportation

#### (1) Factors Impeding Development and Expansion of Use

##### 1) The Rail Transportation Capacity Constraints between Suifenhe and Grodekovo

At the present point in time, compared to the rail transportation capacity (7 million tonnes annually) the actual results for multimodal transportation are so small as to be negligible, and this alone can in no way be called a constraint. However, this stretch is a major rail artery linking China and Russia, and with there already having been overloading in excess of the transportation capacity, it has become a severe constraint.

To remove this bottleneck, China Railway has adopted measures such as triple-heading and long trains, and although it solves the problem temporarily regarding freight transportation, at the same time it brings about an increase in fees. For this reason, after consultation with the Russian side, they should make a start as soon as possible on expansion of the transportation capacity for this section and modification work to increase speed. It is necessary to incorporate explicitly the expansion of rail transportation capacity within the implementation plans for future sea–land multimodal transportation as important content.

##### 2) Transportation Fees

In this transportation experiment, we got an outcome of the transportation fee per 40-foot container being an expensive US\$800 approximately. Although it can be said that the price difference was on a decreasing trend compared to the transportation experiments implemented in the past, there remained a considerable divergence. As causes thereof, the existence of a variety of cost-increasing factors can be pointed out.

As a cause of high fees, by way of example, outlay is necessary to send on empty containers. In the case of using Dalian Port, the land route transportation is by ordinary truck and they tranship to containers there. According to those involved, procuring an empty container and loading the container at Suifenhe results in an approximate 20% increase in cost. In addition, in the case of “China–Russia–China” transportation, it leads to a rise in cost due to the one-way cargo for maritime transportation.

Currently, there is the rule that ships which transport freight to China’s southern ports via Russian ports (treated as domestic Chinese freight) must be Chinese-registered vessels. However, there is no regular shipping service by Chinese-registered vessel between Vladivostok and Shanghai, and vessels registered in other nations are used as exceptional cases. If the returning empty container can be used efficiently, it is the common opinion that a saving of approximately US\$200 can be made for the fee per 20-foot container.

Furthermore, such things as the expensiveness of domestic Russian transportation fees and of maritime freight are considered to be problems, but the fundamental cause which they are also included within is that they are overly expensive, without the operation of economies of scale owing to low freight volumes. At the same time as

solving individual problems, it is necessary to increase the volume of freight handled.

### 3) The Number of Days Required for Transportation

In the experiment implemented for transportation to Japan, a little over a fortnight was required from Suifenhe to Japan. As mentioned above, a reduction is possible via coordination of shipping schedules to ten days (and depending on the state of upgrading, four days ultimately), but there are a number of circumstances and challenges in its realization.

First, it is necessary to be able to assume with certainty the number of days required to pass through Russia. The regular container shipping services of Russian Far East ports are basically weekly services, and in the case where shipping on the planned ship is missed, there is the potential for a loss of time of one week. In order to avoid that risk, ascertaining the amount of leeway while shipping from China is an issue. The greater the uneasiness about the certainty of the number of days for transportation within Russia, the more necessary it is to ship earlier, and that makes the number of days for transportation longer.

### 4) The Issues Related to Road Haulage Using Chinese Vehicles within Russia

As it is difficult for China's road haulage companies to carry out transportation services on Russian soil, the market has become an oligopoly. The two main problems which Chinese firms are faced with are the following.

First, in international and domestic road haulage the standards applied within Russia differ. On the international transport road between Harbin and Vladivostok where mutual traffic is accepted between China and Russia, the Russian domestic standard is applied, where the largest vehicle is 18m long and 2.5m wide. However, some sections within Russia suffer the restrictions of infrastructure, such as bridges, and there is a section with a limit of a total of 38 tonnes for weight and a maximum height of 4m for vehicles.

Second, there is the problem related to customs procedures in the case where Chinese firms handle trade freight, and use bonded warehouses. According to Russian laws and regulations, firms which undertake international transportation business must pay a security deposit of 20 million rubles. However, for the people involved and having an interest in the international transportation business on the Chinese side, and even if registered enterprises within China, as they don't have the financial muscle to pay the security deposit which Russia mandates, they can't become bonded transporters in Russia.

### 5) The Passive Attitude of Consignor Firms

In the transportation experiment implemented within the framework of this collaborative research, we transported two consignor firms' freight in one container apiece. However, these firms did not make the decision easily. At about the time when we began the preparations for the transportation experiment at the beginning of 2014, there

was the expectation we would receive cooperation from a different consignor firm. However, the result of investigating various regulations in detail, on the assumption of transporting the freight of that company, a number of issues became clear, and ultimately we had no choice other than to give up on obtaining the cooperation of that company. In addition, because of having changed the decision midway for other transportation freight found subsequently, immediately before the transportation experiment we sought out another consignor once again, and we managed to realize that. Accompanying this last minute change, the dispatching of one container was delayed by three days, as has been explained earlier.

First of all, the general awareness is low regarding multimodal transportation via the ports of the Russian Far East, and even though firms in Suifenhe and the surrounding area would consider using the transportation service, it is easy to imagine that their counterpart firms in Japan, the ROK and southern China would shy away from use of a route which they did not know well. Furthermore, because they have experienced various troubles in the past within Russia, the local firms which frequently have contact with information regarding the significance and advantages of this route have the attitude of hesitating to accept the risks becoming test cases themselves.

The transportation experiment in the summer of 2014, in addition to the active supporting stance of the Suifenhe City government, was also aided from the Japanese side for part of the transportation costs, which made it possible to secure cooperating firms. Without such conditions, there would be practically no firms which would attempt to actively use the route.

### 6) The Absence of Multimodal Transportation Contractors

There are no business operators which can issue a through bill of lading (thru B/L) to cover the responsibility for all portions of the journey, contracting for transportation from point of departure to point of arrival throughout. Regarding the land transportation sections such as road and rail, waybills are issued by each of the respective transport contractors: for the maritime transportation portions a shipping bill of lading is issued by the ship firm. In that sense all of the experimental transports which have taken place to date differ from "international multimodal transportation" as it is supposed to be.

The non-existence of a forwarder (non-vessel operating common carrier: NVOCC) to issue the through bill of lading is also a cause of the problem of high fees, and not only of the complex relationship of the division of responsibility concerning transportation. The forwarder, on a case-by-case basis for each individual matter, inquires about the fees to each transporter, and then simply adds up the stated fees, adds their own costs and interest to this, invoices the cargo owner, and the fees tend to become high.

At the opposite extreme to such an order-made transportation service is transportation service which

combines together multiple transport modes and puts them into one package. The appearance of forwarders who offer highly-competitive products, rationalizing the cost structure, is hoped for.

#### 7) The Absence of Comprehensive Strategies and Plans

International institutions, the governments of China and Russia, as well as all levels of local government, are offering policies aiming at the putting in place of international transportation corridors and the expansion of international multimodal transportation which uses them, but it is difficult to say that these are always sufficiently effective. The problem is that due to the character of international multimodal transportation services, the related institutions and companies are various, with relations of their mutual interest being complicated, which makes their coordination difficult. There are demands and proposals from each of the respective standpoints, but their organization and coordination is insufficient, and there are many partial solutions to the problems, and no comprehensive ones.

Effective cooperative frameworks both among the provinces and between nations have not been built, and coordination between nations and regions is necessary in a wide range of matters. Regarding cooperative frameworks among nations in particular, central governments need to come to the fore, yet at the current time institutions for promoting sea–land multimodal transportation with the strength and authority to lead have not been formed. In addition, the international container multimodal transportation models sought by national and local governments have not been established.

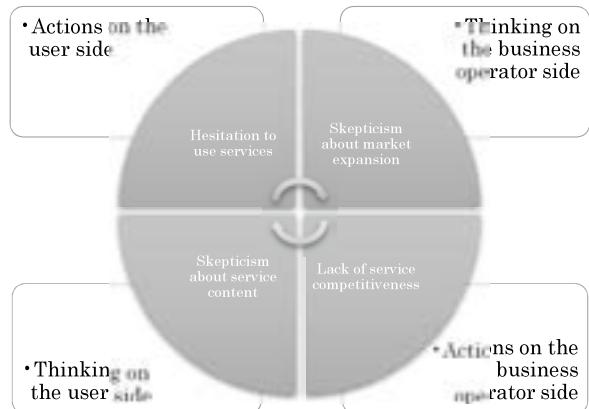
#### (2) The Configuration of Problems

The abovementioned problems mutually impact one another, with the result of falling into the dilemma of “which came first, the chicken or the egg?” When providing new distribution services, the configuration of the problems impeding the development and expansion of use of those services can be presented as in Figure 6. As additional information for the reader, the term of “business operator” used here can alternatively be read as “provider”, and we would like the reader’s understanding that this does not stop at private transportation business operators, but includes all public and private entities connected with the provision of distribution services. For example, government institutions are also included, such as customs and the highway construction sector. Below, we shall summarize and analyze the problems which the multimodal transportation services originating in Suifenhe have, based on this configuration.

#### 1) The “Skepticism about Market Expansion” on the Business Side

Dealing first with the top-right of the figure, the business operator side providing new distribution services (speaking in the context of this research, the providers of international multimodal transportation services taking Suifenhe as the

**Figure 6: The Configuration of the Problems which New Distribution Services Have**



Source: Produced by authors

point of origin) cannot be confident as to how much this new business market will expand. Even if it can be assumed that the latent demand is large, there is no evident demand, and the “base cargo” for motivating an expansion of business does not exist. Furthermore, the means for forecasting demand are limited.

Therefore, business operators try to provide services with minimal investment in order to lessen the risks, and have come to undertake relatively high pricing so as to increase their earnings, even where usage is small. This is linked to the provision of services lacking in competitiveness which is mentioned next.

#### 2) The Provision of Services Lacking in Competitiveness

The transportation industry is a process industry, and while for new participants a large amount of investment is necessary, via effective employment of the equipment invested in (amortized), it is possible to raise profitability. The business operators which don’t have confidence in the market expansion of multimodal transportation do not make new investment in such things as shipping vessels, vehicles, and cargo-handling equipment, and try to make do with the existing equipment. Also, from the aspect of equipment operation, they attempt to provide a level of service which manages to add as little extra cost as possible.

As a result the level of service has ended up low regarding the number of days for transportation (including the speediness, the frequency of services, punctuality, and flexibility). For example, direct trains have not been established in the rail transportation from Grodekovo Station to Vostochny Port, and recomposition of trains is necessary at a station on the way. In addition, the direct shipping services from the ports of Primorsky Krai to Japan are few in number, and their frequency is low.

Furthermore, the business operators who see no value in “prior investment” try to obtain as much income as possible from their customers at hand, and set the fees and prices high. As a result, in proportion to the service level, expensively priced services are offered, and they have not been able to achieve sufficient competitiveness for the

existing transportation services.

### 3) "Skepticism about Service Content" on the User Side

Understandably, consignors will not use services which are overly expensive and whose quality is not high. The current situation is one where, regarding sea-land multimodal transportation services via Russia, there are consignors who have the rudimentary doubt of whether freight will reach its destination.

In addition, even if the business operator side takes some kind of steps to improve services which would then meet the needs of the customers, the customers will not see them as trustworthy immediately. Until they establish a good reputation via building up successful examples, the consignors will make the judgment of "we cannot believe words alone".

### 4) Hesitation to Use Services

Consignors are conservative regarding the choice of distribution route, and they will not choose to switch to a new distribution route unless advantages can be expected with certainty, they can achieve success at small risk, and a considerably large profit can be obtained. In the abovementioned circumstances, many consignors will not actively use the transportation routes via Russia. In reality, it took great effort to secure firms to cooperate in the transport experiments.

Therefore, for the service operator side, it is difficult to see to what degree the user firms will increase in the future, and will lead to them having the "skepticism about market expansion" mentioned at the beginning of this subsection. If a large number of firms do not use the services, it will unfortunately not lead to the securing of base cargo with specific large-scale consignors using the services.

## **5 Proposals Aiming at the Expansion of Multimodal Transportation**

### (1) Raising of the Level of Services and the Promotion of Use

In the previous section, we explained the configuration of problems as "which comes first, freight or services?", by way of the example of the chicken and the egg. Despite it potentially being possible for both business operators and users to enjoy the benefits, it has stumbled at the start. Realizing benefit which private firms won't realize when just left to it is the role of government. It is necessary to go on changing the thinking and actions of firms by means of policy.

The policy objective to be aimed at is the formation of a virtuous circle, with the raising of the level of services (competitiveness) leading to the expansion of use, and the expansion of use leading to a further raising of the level of services (competitiveness). Namely, the "raising of the level of services" and the "promotion of use" must be moved forward as with the two wheels of a cart.

In that event what the policymakers should prioritize are approaches to the business operators. First, if services are

not provided, nothing can be realized with demand not having been created. Additionally, there is also the aspect of it being easy to approach business operators as they are fewer in number than the users. The government role here centers on the private-sector business operators sharing the risk of losses as well as the various sections of government as service providers themselves striving to improve services.

At the same time, it is necessary to also promote approaches to the user side. The government role here is to eradicate the concerns of users, and depending on the circumstances it is also possible to share the risks.

What is important is that a great many concerned parties consistently share such things as objectives, means, division of roles, and progress, and continue advancing initiatives while collaborating with one another. The creation of frameworks and organizational management to that end are also roles expected of government.

Based on the above thinking, we make the following recommendations regarding the policies which should be implemented primarily from the standpoint of (all levels of) government.

### (2) Recommendations

#### 1) Clarification of Basic Principles

In order to continue garnering wide-ranging support and steadily promoting the proposition of the "expansion of multimodal transportation via Russia taking Suifenhe as the point of origin", it is necessary to spell out clearly highly-appealing basic principles.

It is important to continue seeking interest and cooperation, urging "environmental friendliness" to society as a whole, "high transportation speed" to potential user consignor firms, and the "conducting of the invigoration of local economies" to local residents and firms.

These basic principles are rated as key objectives in executing the concrete measures mentioned below.

#### 2) Building of Frameworks for Promotion

In order to continue realizing the objectives under the clear basic principles, it is necessary to construct effective frameworks for promotion. We make the following three recommendations in this respect.

Formulating Strategies and Road Maps. Based on the basic principles, they should formulate strategies in document form stating the setting of concrete objectives, and approaches and methods toward their realization, etc. For example, the determining of a direction promoting, as the two wheels of a cart, the raising of the level of services and the promotion of use is conceivable. Furthermore, for the realization of strategies, they should formulate road maps which determine the division of roles for the parties involved and the project implementation period, etc. Among them, setting numerical targets divided into fixed periods will probably also be effective. It is necessary that these documents are determined and shared after going

through adjustment by the interested parties in the public and private sectors of each country.

Establishing a Permanent Conference. In order to formulate strategies and road maps, it is necessary to undertake discussion by holding a series of conferences bringing together the interested parties. Furthermore, in order not to have these documents end up as pie in the sky, the consistent confirmation of progress and amendment is necessary. To this end they should establish a permanent conference. The problem is that the risk is great of the scope of the conference growing too large, and its effectiveness diminishing. The stratagem of utilizing a small committee and sessions is necessary. The securing of this effectiveness is the most difficult problem within the series of recommendations.

Establishing an Administrative Secretariat. A secretariat is necessary for the management of the progression of the road maps and the conducting of the permanent conference. It is hoped that the secretariat will be staffed by persons able to realize intimate links with the central governments of the nations concerned.

### 3) Raising the Level of Services

The raising of the level of multimodal transportation services and promotion of their use are the two wheels of the cart. Regarding the raising of the level of services, making efforts in determining precise objectives (for example “realizing four-day transportation to Niigata”, etc.) will be effective. We make the following five recommendations in relation to this.

Advancing the Development of Infrastructure. The elimination of the sections that have already become bottlenecks is a given, but also the development of infrastructure which will meet the expected future increase in transportation volumes should be moved forward, in accordance with the “road maps”.

Support for Private-Sector Business Operators. The forwarders and road, rail, and sea transportation operators who undertake multimodal transportation face business risks in a (hypothetical) market in which demand is not manifest. To share part of that risk governments should provide subsidies. For example, in the case of the “Yuxin’ou [Chongqing–Xinjiang–Europe] Railway” transportation route which is a representative example for the development of the “new Silk Road economic belt” promoted by the Chinese government (from Chongqing in China to Duisburg in Germany), Chongqing purportedly makes a subsidy of US\$3,000 per 40-foot container. Additionally, in similar fashion, for one block train Chengdu pays US\$4,000, and Zhengzhou a two-million yuan subsidy.

Promoting Links among the Parties Concerned. They should promote the exchange of information, the sharing of knowhow, collaborative projects, the harmonization of interests, reciprocity among private-sector operators, and reciprocity among government-related institutions, as well

as between the private and public sectors. Possible measures are attracting strong companies from outside the region so as to introduce high-level service knowhow, and acting as intermediary in the establishment of joint-venture companies.

Improving Legal Systems. Regarding a variety of areas, including regulations relating to transportation business, border-crossing procedures, and safety regulations, it is necessary to simplify complex regulations, make operations transparent, and eliminate contradictions between regulations. For example, regarding freight originating in China, it is considered that they should introduce regulations combining export customs-clearance procedures at Suifenhe customs with transit customs-clearance procedures at Grodekovo customs and those of Russian ports.

Amassing Transportation Experiments. The challenges involved in multimodal transport differ depending on the freight commodity transported, and the points of departure and arrival, etc. Effective here is the repeating of a cycle of specifying the causes of various problems associated with transportation, seeking solutions, and based on the results accumulating knowhow linked to the further improvement of services. In this regard the recent transportation experiment was effective.

### 4) Promotion of Use

At the same time as striving for improvement in the level of services, it is important to also strive for the promotion of use, encouraging the demand side. We make three recommendations in this respect.

Providing Information Aimed at Consignor Firms. They should continue providing information via a variety of media, conferences and seminars, etc., on the advantages of multimodal transportation originating in Suifenhe, and the status of improvement in services. Introduction of successful case examples by consignor firms which have actually used it will be effective.

Support for User Firms. For the time being, because the fees are forecast to be high in comparison with competing routes, the government side should assist with part of the fees.

Striving for the Invigoration of Trade. Aiming at the expansion of international transportation demand in its entirety, they should strive for the invigoration of trade via the staging of trade fairs, etc.

## Afterword

The idea of attempting to construct a distribution route connecting Heilongjiang Province and Niigata Prefecture, by means of multimodal transportation via Russia and with Suifenhe as a gateway, has been around since the 1990s. However, within the socio-economic situation at that time it was not possible to resolve complicated issues only by cooperation at the local government level, and to construct

high-level distribution services.

With time having past, the globalization of the world economy having progressed, and the regional socioeconomic situation also having developed and stabilized, the conditions for the multimodal transportation via Russia to be realized as practical distribution routes are being put in place. It would be fair to say that what was once a “dream” has become a feasible “objective target” through the solution of specific issues.

This paper took as the principal target of study transportation services having Suifenhe in Heilongjiang Province as their origin. However, this is not necessarily something which negates the significance of the routes taking Hunchun in Jilin Province as their origin, for which the expansion of multimodal transportation is similarly being sought. There are many issues which the two have in common, and the resolution of problems and the accumulation of knowhow on one side contributes to the other, with it also being possible for the two to solve issues in collaboration, which would be difficult to solve alone. We deem it important to realize the expansion of multimodal transportation in its entirety, by way of appropriate competition and cooperation.

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