

한중일 3국간 물류정보 공유 및
활용방안 연구(2차 연도)

- 동경 워크숍 및 국제세미나 참석 보고서 -

Workshop on the Korea-China-Japan Intra Logistics Research
30-31 March 2009, Tokyo, Japan

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I. 출장 복명서

1. 출장목적

- 한중일 물류정보 공유관련 National Workshop(동경) 참석 및 발표
- NMRI 주관 동경대 세미나 참석 및 발표
- 한중일 공동연구관련 최종보고서(Draft) 작성 일정협의

2. 출 장 자

- 해양물류연구부 김수엽 부연구위원
- 해양물류연구부 이호춘 책임연구원

3. 출장일정

- 2009. 3. 29(일) ~ 4. 1(수) (3박 4일)

4. 출 장 지

- 동경(일본)

5. 출장일정 및 출장지

일 정	출장지	주 요 내 용	비고
3. 29(일)	김포/ 동경	16:40 김포공항 출발 18:45 하네다공항 도착	김수엽 이호준
3. 30(월)	동경	09:00 호텔 → NMRI 이동 오전 워크샵 참석 오후 워크샵 참석	
3. 31(화)	동경	09:00 호텔 → 동경대 이동 오전 Special Seminar 참석 오전 Special Seminar 참석	
4. 01(수)	동경/ 김포	13:05 하네다공항 출발 15:20 김포공항 도착	

6. 동경 워크숍 주요 안건

- 한중일 연구기간(KMI, WTI, NMRI)별 연구진행 상황 확인
- 최종 보고서(안) 작성관련 일정 및 차기 워크숍 일정 협의

7. 기대효과

- 한중일 물류정보 공유를 위한 기반 구축
- 한중일 물류장관 회의를 정책차원에서 지원하고 선도
- 한중일 공동연구(joint research) 활성화를 위한 토대 마련

8. 향후 출장시 유의사항

- 동경시내는 출퇴근 시간대 교통이 매우 혼잡하므로 출퇴근 시간대를 피해 대중교통 이용하는 것이 편하며, 택시는 요금이 매우 비싸기 때문에 이용에 주의 요망

II. 동경 워크숍 프로그램

Workshop and International Seminar

Date : March, 30 - 31, 2009

Place : Work Shop NMRI, Mitaka-si, Tokyo

Int'l Seminar KOSHIBA Hall in Tokyo Univ., Bunkyo-ku, Tokyo

Date	Time	Agenda
Day 1 2009/03/30 Workshop	10:00-10:20	Opening Address Introduction of NMRI (Video Show)
	10:30-12:00	Situation and Progress in Action Item 4
		- Situation of Action Item4 (Presentation by NMRI)
		- Summary of Progress in Each Study Item -1 NMRI (Database and Environment Issue) -2 KMI (Maritime Transport Service) -3 WTI (Information Platform)
		- Report for Action Item4 · Contents of the Report · Discussion
	12:00-13:30	Lunch
	13:30-14:30	Research Activity for Database Development
		- Results of Estimation of Freight Flows (Presentation by NMRI) - Discussion
Day2 2009/03/31 Special Seminar	14:30-17:00	Research Activity for Database Utilization
		- Study for Environmental Issue (Presentation by NMRI)
		- Study for Maritime Transport Service (Presentation by KMI)
		- Study for Information Platform (Presentation by WTI) - Discussion Future task for database utilization & applications
	17:00-	Confirming of the Research Plan
		- Discussion - Next WS (Place & Date)
	10:00-17:00	SPECIAL SEMINAR (Introduction of Action Item 4, and International Cooperation for Maritime Logistics Study)

III. 발표 자료


1. 한국

Workshop on the China-Korea-Japan Intra Logistics Research

High Value-added Maritime Services

Korea Maritime Institute
Research Fellow, Kim, Soo Yeob

30 March, 2009



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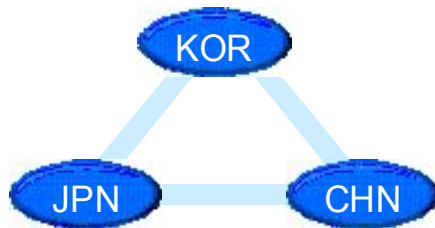
Contents

1. Overview of study
2. Value-added maritime services
3. Analysis of container shipping services
4. Multimodal services
5. Secure value-added Maritime services
6. Next steps

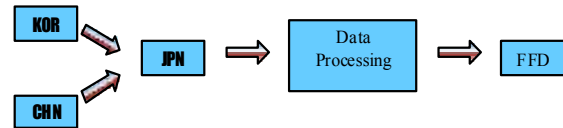
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1. Overview of study

Step 1. Data collection and Freight flow data



- Basic year : 2005
- Port to port container flow
- Data collection



Step 2. Utilization and Application the data

Fulfiller	Application Area
NMRI	Environment - GHG emission from container
KMI	High Value-added maritime services
WTI	Information platform

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2. Value-added Maritime services

? Concept



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2. Value-added Maritime services(continued)

? Standpoint of Shipping line

- Profitable
- Proper ratio of utilization(消席率)
- Close Relationship with stake-holders

? Standpoint of Stevedoring

- Stable calling
- Steady volume
- Harmonized service(Mainline + Feeder line)

? Standpoint of Shipper

- Fixed service(安定性)
- Reasonable price(合理的價格)
- Reliability(信賴性)
- Visibility(可視性)

? Standpoint of Government(P.A.)

- Safety and Security of service
- Equilibrium(Supply and Demand)
 - Reducing GHG emission

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3. Analysis of container shipping services

? Korea-China Routes

- ❑ Fleets were controlled by both government and shipping lines
- ❑ Most of shipping lines were created by both side investment(合作船社)
- ❑ Routes will be open 2009(But it was postponed till recovery of shipping economy)

Item	No. of Vessels	CNTR CAPA(TEU)			Frequency of Liners
		Design	Loadable	Per week	
Container	71	77,812	59,478	36,916	80/week
Car-Ferry	16	3,529	3,529	9,240	42/week
G-Total	87	81,341	63,007	46,156	122/week

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3. Analysis of container shipping services(continued)

? Korea-Japan Routes

- ☐ Korean shipping lines control Korea – Japan routes
- ☐ Open small and remote routes from/to Korean ports
- ☐ Suffer from cargo decreasing and exchange rate (close some routes)
- ☐ Value added service (Road – car ferry – road)

Item	No. of Vessels	CNTR CAPA(TEU)	Frequency of Liners
Container	68	46,058	95/week
Car-Ferry	5	1,235	16/week
G-Total	73	47,293	111/week

3. Analysis of container shipping services(continued)

? China-Japan Routes

- ☐ Chinese shipping lines control China – Japan routes
- ☐ Trade imbalance

Order	Company Name	No. of Vessels	Total CNTR CAPA	CNTR CAPA (TEU/week)	No. of Liners/week	Market Share(%)
1	SITC	28	23,484	18,942	24	31.48
2	SINOTRANS	16	11,561	11,561	16	19.21
3	COSCO	13	8,853	8,853	13	14.71
4	SHANGHAI JINJIANG	10	7,304	5,776	8	9.60
5	SHANGHAI HAI HUA	5	4,136	3,366	4	5.59
6	CHINA SHIPPING	7	4,388	2,588	5	4.30
7	WINLAND	7	4,858	2,429	2	4.04
8	MIN SHENG SHIPPING	5	1,957	1,957	5	3.25
9	NAMSUNG	4	3,344	1,672	2	2.78
10	CK LINE	3	1,396	1,345	2	2.24
11	SHANGHAI TMSC MARINE	4	1,600	1,200	3	1.99
12	SHANGHAI SUPER EXPRESS	1	242	484	2	0.80
Total		103	73,123	60,173	86	100.00

3. Analysis of container shipping services(continued)

- Average size of vessels deployed across the region reaching 1,499 TEU

Size Range (TEU)	2004		2005		2006		2007	
	No.of Fixtures	% (Share)	No.of Fixtures	% (Share)	No.of Fixtures	% (Share)	No.of Fixtures	% (Share)
Less than 500	70	17.9%	40	15.4%	33	10.5%	42	9.5%
500-999	143	36.7%	104	40.0%	121	38.7%	163	37.0%
1,000-1,499	121	31.0%	65	25.0%	88	28.1%	129	29.3%
1,500-1,599	47	12.1%	43	16.5%	67	21.4%	93	21.1%
Above 2000	9	2.3%	8	3.1%	4	1.3%	14	3.2%
Total	390		260		313		441	
Average nominal capacity	943		965		1,018		1,078	

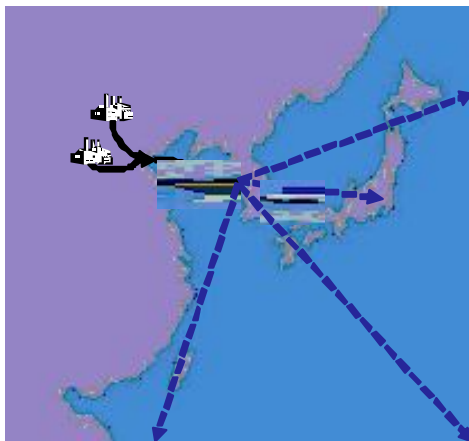
Source : Intra-Asia Container Trades, Drewry, June 2008

- Average size of vessels deployed China-Korea : 530TEU, China-Japan : 580TEU and Japan-Korea : 620 TEU

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4. Multimodal Services among 3 countries

? Sea and Air



• Merits

- Reduction of transportation time and stock expense of transferred cargo
- Sales promotion by reducing expense and security of logistics plan flexibility
- It makes LCL cargo transportable with proper expense

• Demerits

- Occurrence of freight damage caused by repacking and cargo dismantlement
- Liability disputes between marine and air transport, difficulty of connected transportation
- Difficulty of space securing to load cargo during high demand season(insufficient cargo space)

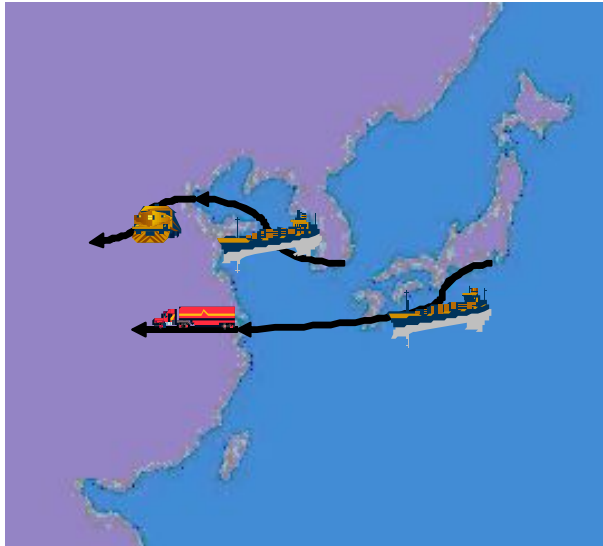
China-Korea sea & air cargo

Index	2001	2002	2003	2004	2005	2006
Cargo traffic(t)	16,760	24,977	33,436	39,783	44,946	45,680
Increase(%)	-	49.03	33.87	18.98	12.98	1.63

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4. Multimodal Services among 3 countries(continued)

? Sea and Land(Road and Rail)



• Characteristics

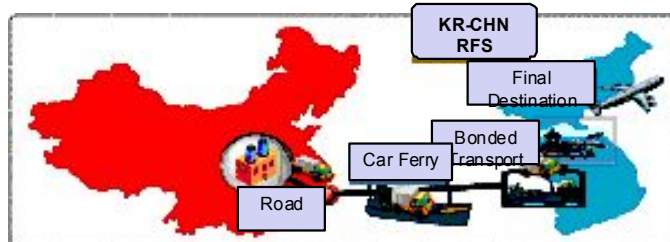
- Transportation cost is 20~30% lower compared to air fare
- Completion of delivery within 48 hours is possible based on door to door transport(1 day required in case of air transportation)

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4. Multimodal Services among 3 countries(continued)

□ RFS(Road Feeder Service)

- China ? Korea
- Concept : Truck + Ferry + Truck + Air



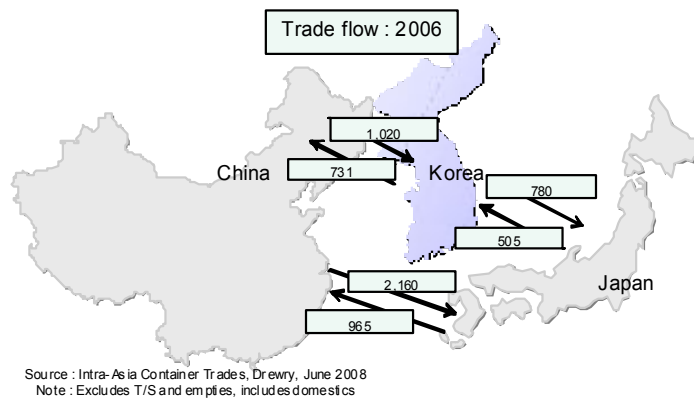
	RFS	Road&Air	Sea&Air	Air & Air
Cost(5ton, \$)	14,820	16,000	14,765	16,000
Time(Hour)	24/26	24	30	6

Route : Qingdao-N.A
Year : 2007

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5. Secure value-added Maritime services

- ❑ Trade volume between 3 countries increasing every year
- ❑ Derived service(demand) from trade between 3 countries
- ❑ Trade volume imbalance still exist between 3 countries



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5. Secure value-added Maritime services

- 1) Deploying proper fleets
 - Determining optimal ship size for each routes
 - Mixed service(Shuttle service + Round service)
- 2) Rapid service
 - Satisfying requests of shippers
 - Reducing lead time
 - High speed vessel
- 3) Promoting multi-modal service
- 4) Green logistics
 - Eco-ship(Energy-saving ship)
 - Modal Shift

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5.1 Proper fleets Deployed

- ❑ Compare deploying vessels with container freight flow
- ❑ Decide proper fleets

Port	Year/ Month	Terminal (Berth)	Berthing capacity (TEU)	Terminal Operator	Shipping line	Route	Name of ship	Loading capacity (TEU)	Frequency
A	2009.3	Incheon 1 terminal	3,000	CJK terminal	CK Line	In che on - Qing da o - Hakada	Bravo	1,200	1 per week
A									
A									
B									
B									

Port	A	B	C	D	E
A	-	50,000	45,000	12,000	37,000
B	39,000	-	44,000	29,000	45,000
C	Xxx	Xxx	-	Xxx	Xxx
D	Xxx	Xxx	Xxx	-	Xxx
E	Xxx	Xxx	Xxx	Xxx	-

O Providing FFD to shipping lines

O Shipping line should be consider traffic volume between potential routes

- Decision ship size, frequency, etc)
- stake-holders use data as reference

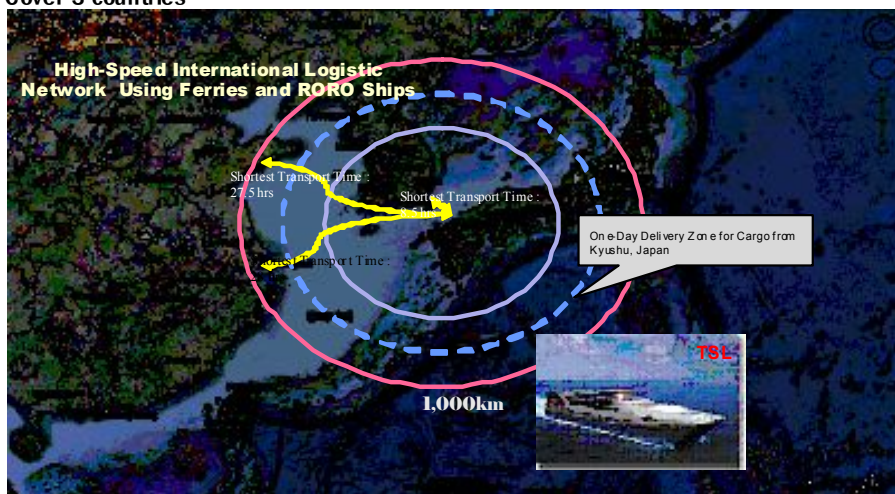
O How we collect data and provide

- Using information platform



5.2. Rapid service

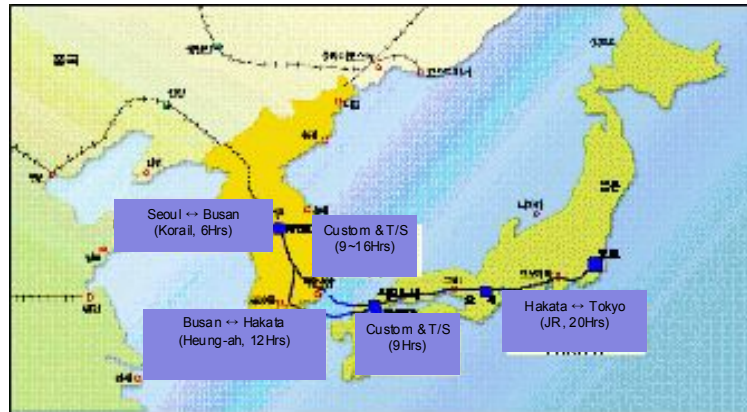
- ❑ Real time response to shipper
- ❑ Reducing lead time(Just in Time)
- ❑ High speed vessel (Hot Delivery Service)
 - Techno SuperLiner(90km/hour)
 - Cover 3 countries



5.3 Promoting multi-modal service

- ❑ Combine all transport modes into total service
 - Sea, Road, Rail, Air
- ❑ Fix related regulations, law, customs and barriers
- ❑ Incentives to multi-modal service

<Basic concept for Sea & Rail multi-modal between Korea-Japan>

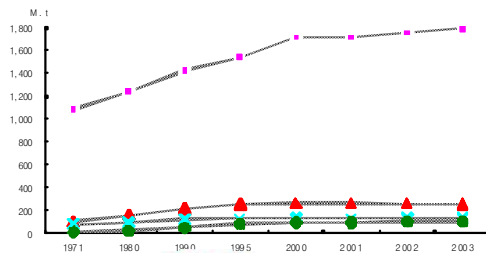


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5.4 Green logistics

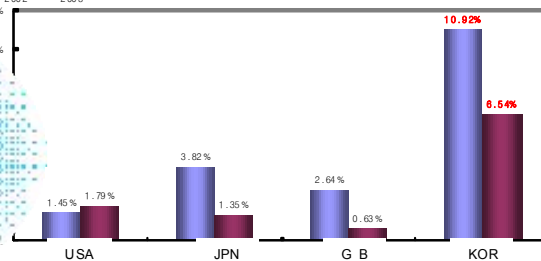
- ❑ Eco-ship (Energy saving ship)
- ❑ Modal shift
- ❑ Reduce GHG emission : Refer Japanese presentation(Mr. Majima)

Emission of CO₂ in the transportation section of each countries



Emission of CO₂ of 4 countries

Increasing rate of CO₂ for each countries



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6. Next steps

- ❑ More clear utilization and application of the DB
- ❑ Future tasks : Discussion
 - Submit draft
 - Combine one report
 - Prepare final report for director meeting and ministerial meeting
- ❑ Suggestions and requirements
 - Solve data conflict : FFD(2005) vs Fleet information(2005 & 2008)
(if we set up information platform, we have to update FFD and fleet information)
 - Exchange fleet information(specially, China-Japan)
- ❑ Detail plan for information platform(linkage with 2 topics(GHG emission and maritime service))

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Thank You!

ご傾?、ありがとうございます

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2. 중국





Port statistic data structure

- ◆ The port container statistic data is divided into inbound and outbound data according to empty and laden.
- ◆ The port container statistic data is divided into international line, inland feeder line and domestic line, international line and inland feeder line belong to foreign trade. (Inland feeder: hub port to feeder port cargo)
- ◆ There is no Transshipment containers statistics in port statistic system.



Port statistic data structure examples

E.g. Empty or Laden

Port name	Sub total	Outbound	inbound
Port A			
Port B			

E.g. TEU or tons

Port name	International line			Inland feeder line			Domestic line		
	Sub total	Inbound	Outbound	Sub total	Inbound	Outbound	Sub total	Inbound	Outbound
Port A									
Port B									



Port statistic data structure

In international line container statistics, laden and empty containers and TEU/FEU is required, but actually, the port operator are more preferred to provide the total number. E.g. WTI data only have inbound and outbound numbers.

Meanwhile, not all port provides data on port to port bases, there are more preferred to provide port to country container flow data, e.g. from port of DALIAN to Korea and Japan.



Concludes:

From China port statistic data, it's hard to estimate accurate port to port, empty and laden container freight flow data. WTI data only used for reference!



FFD between China-Japan in 2005

- ◆China-Japan shipping line is very competitive.
- ◆There is no statistic resources from shipping lines committee in China.
- ◆WTI data is from the point view of Port statistics.



FFD between China-Japan and Korea in 2005

	市·省	Districts	Port	From China to Japan		From Japan to China		From China to Korea		From Korea to China	
				WTI	SCAGA	WTI	SCAGA	WTI		WTI	
12	天津市	Tianjin	Tianjin	272	123	229	162				
12	天津市	Tianjin	Xingang					209		273	
13	河北省	Hebei	Jingtang	0		0					
13	河北省	Hebei	Qinhuangdao					1		2	
21	辽宁省	Liaoning	Dalian	218	65	239	173	93		178	
21	辽宁省	Liaoning	Dandong	0		0		15		28	
21	辽宁省	Liaoning	Yingkou	3		4		5		12	
22	吉林省	Jilin	Huichun					4		4	
31	上海市	Shanghai	Shanghai	1065	368	1062	822	210		191	
32	江苏省	Jiangsu	Lianyungang	88	21	82	54	35		35	
32	江苏省	Jiangsu	Nanjing	7	5	5	4	22		15	
32	江苏省	Jiangsu	Nantong	3	3	10	5	2		0	
32	江苏省	Jiangsu	Suzhou	5		5					
32	江苏省	Jiangsu	Taizhou	1		0					
32	江苏省	Jiangsu	Zhangjiagang	4	3	5	4	8		9	
33	浙江省	Zhejiang	Ningbo	129	46	105	93	89		90	
35	福建省	Fujian	Fuzhou	23		20		5		7	
35	福建省	Fujian	Quanzhou					0		4	
35	福建省	Fujian	Xiamen	136	24	167	122	10		26	
37	山东省	Shandong	Lengkou	12		13					
37	山东省	Shandong	Qingdao	381	60	447	253	162		294	
37	山东省	Shandong	Rizhao	13		7		4		7	
37	山东省	Shandong	Rongcheng					11		12	
37	山东省	Shandong	Shidao					10		13	
37	山东省	Shandong	Weihai	11		12		31		54	
37	山东省	Shandong	Yantai	41		42		36		45	
44	广东省	Guangdong	Guangzhou	18	12	8	3				
44	广东省	Guangdong	Shantou	2		0		8		4	
44	广东省	Guangdong	Shenzhen	410		337					
44	广东省	Guangdong	Zhuhai	0		1					
46	海南省	Hainan	Haikou	8		8					
			Fuyuan		5		18				
			Other		13		73				
			Total	2850	748	2808	1786	970		1303	

SCAGA dataformer Nicchu Teikoku Kai data(International transportation handbook, ocean commerce, 2007)



FFD between China-Japan in 2005

WTI data: total freight flow is 4660,000TEUs

SCAGA data: total freight flow is 2534,000TEUs

The reason why there are big difference between WTI data and SCAGA data:

(1) The SCAGA data are laden containers while WTI data are both laden and empty containers.

(2) The SCAGA data may not include all the shipping lines results.

From these reasons, we can conclude that: Both WTI and SCAGA data may need be corrected.



FFD between China-Japan in 2005

First, from the laden and empty container point of view, as we interview with some port operators, the empty container generally accounts for $\frac{1}{4}$ in China-Japan lines. So the WTI data for FFD is larger than actual.

Second, from the shipping lines point of view, the SCAGA data maybe smaller than actual, NMRI should consult with SCAGA to make some correction.



FFD between China-Korea in 2005

China-Korea shipping line is less competitive than China-Japan line.

There is YELLOW SEA LINER COMMITTEE in China-Korea route.

WTI reviewed the port statistic data and YSLC, and think the YSLC data is more preferable.



FFD between China-Korea in 2005

The difference between YSLC data and port statistic data:

About 4000000 TEU in port statistics

About 2200000 TEU in YSLC data

As interviewed with port operators, the empty in China-Korea line generally accounts for 1/3 of the total.

3. 일본

NMRI-KMI-WTI 5th W.S.

Situation of Action Item4

**Sharing and utilizing logistics information among
China, Japan and Korea**

By

Toshiyuki KANO

Logistics Research Center

March 30, 2009 NMRI, Tokyo, Japan



National Maritime Research Institute of Japan

Conclusions of 4th WS

Conclusion 1

1.The Goal & Output of our study is accepted

Output of our study

◎Development of Freight Flow Data;

FFD; Ocean cargo movement by cargo type and shipping route
by accurate data with common methodology

◎Study of Utilization & application;

collaboration with related institutions

- GHG emission
- high added-value maritime service
- Information platform
- etc.

Goal of our study

Create of seamless logistics system
Establish of environmental friendly logistics

Conclusion 2

- We will submit a report to the next Ministerial Conference .
(prepare report to director meeting before Ministerial Conference)
- NMRI contact with Government on collaboration with transportation by air study items
- Scope of Development of FFD are
 1. 2005 annual statistics
 2. Container port to port flow (include in direct & transit)
 3. Port : more than 100,000TEUs(exclude nonsense port for Japan & Korea)
- Schedule
 1. NMRI will develop port to port based FFD until the end of this year collaboration with KMI and WTI
 2. Study on the utilization & application will be conducted until end of next March

- WTI fulfils with table1 and KMI will confirm the table1.(Annex1)
- WTI will provide Chinese container freight-flow data to NMRI & KMI (Annex2).
- NMRI & KMI exchange the data on Liner schedule on 2005 based on Ocean Commerce Ltd.
- KMI has the data on port to port container movement data between three countries in 2005. KMI will open the OD Matrix data for joint study and will send this data to WTI & NMRI
- KMI has the data on detailed container movement data based on Korea which recognize empty or loaded container. KMI also will open the data for our joint study.
- Each Institute conduct survey for the detail criterion for its own country's Port statistics.
- Next WS will be held in Japan in end of March. NMRI prepare invitation letter more than 1month behind the date of the WS opening day.

Conclusion 3

The role & Contribution of research & report

●Development of Freight Flow Data;

1. Estimation NMRI
2. Existing data, consistency KMI,WTI,NMRI

●Study of Utilization & application;

1. Environment NMRI
2. Maritime Service KMI
3. Information Platform WTI

Summary of progress in each study Item

- NMRI(Database and Environment Issues)
- KMI (Maritime Transport Service)
- WTI (Information Platform)

Report of Action Item4

Discussion will be after the Research Activities for the Database Utilization

Report of Action Item4

Discussion will be after the Research Activities for the Database Utilization

- Contents

1. Current East Asian Logistics
2. Development of Freight Flow Data
3. Utilization and Application of the Database
4. Proposal
 - Logistics information network system,
 - Contents & Ways to use

- Schedule

Target Date Middle of September?

IV. 주요 합의사항

1. 공동연구관련 최종보고서 초안 작업관련 사항

- 장관회담 이전에 최종보고서 초안 완료
 - 12월 예정인 장관회담 일정을 고려하여 9월까지 최종보고서 초안을 작성
 - 3국이 각자 맡은 분야에 대한 최종 원고안을 9월까지 작성
- 최종보고서 초안 작성 완료 이전에 최종 점검차원에서 3국이 참가하는 워크숍 개최
 - 7월경에 일본(동경)에서 개최(잠정적)

2. 차기 워크숍 개최관련 사항

- 잠정적으로 차기 회의는 일본(동경)에서 7월에 개최하기로 결정함
 - 중국(WTI)과 일본(NMRI) 측은 비자발급 문제로 인해 비자발급이 용이한 한국에서 개최하기를 희망하였으나, 한국(KMI)은 2007년 한국 2회, 2008년 중국 2회 개최되었던 점을 들어 차기 회의도 일본에서 개최하는 것을 주장하여 잠정적으로 일본에서 개최하는 것으로 정했음
 - 최종 확정은 한국(KMI), 중국(WTI), 일본(NMRI) 3자가 6월 이전에 최종적으로 합의하여 결정하기로 정함

V. 사진 자료



[그림 1]
한-중-일 워크숍 발표 사진
(NMRI 회의실)



[그림 2]
한-중-일 워크숍 발표 사진
(NMRI 회의실)



[그림 3]
동경대 세미나 발표 사진
(동경대 Koshiba Hall)