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TRANSPORT PLANNING AUTHORITY
MINISTRY OF TRANSPORT
THE ARAB REPUBLIC OF EGYPT

# THE STUDY ON MULTIMODAL TRANSPORT AND LOGISTICS SYSTEM OF THE EASTERN MEDITERRANEAN REGION AND MASTER PLAN IN THE ARAB REPUBLIC OF EGYPT

## FINAL REPORT

## Volume 1

## EXECUTIVE SUMMARY

AUGUST 2008

JAPAN INTERNATIONAL COOPERATION AGENCY

NIPPON KOEI CO., LTD.
KATAHIRA & ENGINEERS INTERNATIONAL

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*Exchange Rate:*

*US$ 1.00 = LE 5.71*

*(As of June 2007)*

# PREFACE

In response to the request form the Government of the Arab Republic of Egypt, the Government of Japan decided to conduct the "Study on Multimodal Transport and Logistics System of the Eastern Mediterranean Region and Master Plan in the Arab Republic of Egypt", and entrusted it to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team headed by Mr. Akihisa Kojima of Nippon Koei from November 2006 to December 2007. In addition, JICA held the support meetings headed by Professor Toshinori Nemoto of Hitotsubashi University to provide advises to the Study Team during the course of the Study in Japan.

The Study Team conducted field surveys, and conducted discussions, data analysis and project formation together with the officials concerned of the Transport Planning Authority and the Ministry of Transport as well as other officials. Upon retuning to Japan, the Study Team prepared this final report.

I hope that this report will contribute to development in the Arab Republic of Egypt, and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of the Arab Republic of Egypt for their close cooperation extended to the Study Team.

August 2008

Seiichi Nagatsuka
Vice President
Japan International Cooperation Agency

August 2008

Mr. Seiichi Nagatsuka
Vice President
Japan International Cooperation Agency

**Letter of Transmittal**

Dear Sir,

We are pleased to submit herewith the Final Report of the "Study on Multimodal Transport and Logistics System of the Eastern Mediterranean Region and Master Plan in the Arab Republic of Egypt."

The report compiles all the results of the Study and reflects the advices of the authorities concerned of the Government of Japan and your agency as well as the comments made by the counterpart organization i.e. the Transport Planning Authority, the Ministry of Transport and other authorities concerned in the Arab Republic of Egypt.

The report presents the present and future conditions of the freight logistics for export and import. It presents the overall plan for the further logistics development of all the multimodal modal and logistics system: including forwarding activities, custom clearance and procedure activities. For the newly suggested projects, more than twenty projects are proposed in addition to the projects that have been already planned by the Government of Egypt.

We wish to take this opportunity to express our sincere gratitude to your agency and the Ministry of Foreign Affairs. We also wish to express our deep gratitude to the Transport Planning Agency and the Ministry of Transport as well as other Government Agencies concerned in the Arab Republic of Egypt for the cooperation and assistance extended to us during the Study. We hope this report will contribute to the development of the Arab Republic of Egypt.

Very truly yours,

Ken Nishino
Team Leader,
Study on Multimodal Transport and Logistics System
of the Eastern Mediterranean Region and Master Plan
in the Arab Republic of Egypt


Location Map

# *Holistic Approach to Logistics Enhancement Not to Lose the Emerging CHANCE*

- Egypt Is Rising Again
- Egypt Is Losing Occasion
- Yet It Is Not Too Late


**Development of Alexandria Port**

Source: Google Earth

Issues
- Lack of Container Handling Equipment
- Lack of Container Yard
- Insufficient Water Depth

- **Promotion of Strategic Sea Port Development**
- **Realization of Logistics System on Inland Transport**
- **Enhancement of Logistics Industry**
- **Establishment of Governmental Body related to Logistics**

To/From EU

ALEXANDRIA

DAMIETTA

PORT SAID (West)

PORT SAID (East)

Damanhur

Alex Agriculture Road

El-Mahalla El-Kubra

El-Mansura

Burg El Alab

El Alamain

El Arish

Bir el Abd

**Construction of New Burg El Arab Direct Access Line**

New Burg El Alab Industrial Area: 800ha

Cairo-Alex Desert Road

**Development of New River Port**

Tanta

Zagazig

Ismallia

**Construction of 10th of Ramadan Direct Access Line**


Source: Google Earth

Issues
- Limited Area of Container Yard
- Insufficient Length of Breakwater

Sadat City

Sadat City Industrial Area: 500ha

**Construction of 6th of October Direct Access Line**

**Development of Logistics Center at 6th of October**
(Industrial Area: 2,550ha)

6th of October

CAIRO

Helwan

10th of Ramadan

Cairo-Ismailiya Desert Road

**Development of Logistics Center at 10th of Ramadan**
(Industrial Area: 3,500ha)

Cairo-Suez Desert Road

**Development of New Freight Link**

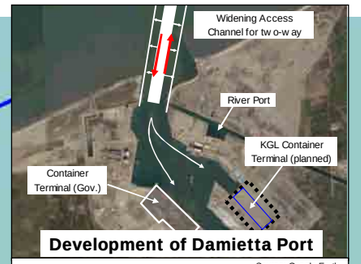
**Regional Ring Road (Under Construction / Planning)**

SUEZ

SOKHNA

To/From Gulf and Asian Countries

To Upper Egypt




**Development of Damietta Port**

Source: Google Earth

Issues
- Large Maintenance Dredging Volume
- Limited Channel Capacity

**Development of Logistics Center at Port Said Port (East)**


**Development of Port Said Port (West)**

Source: Google Earth

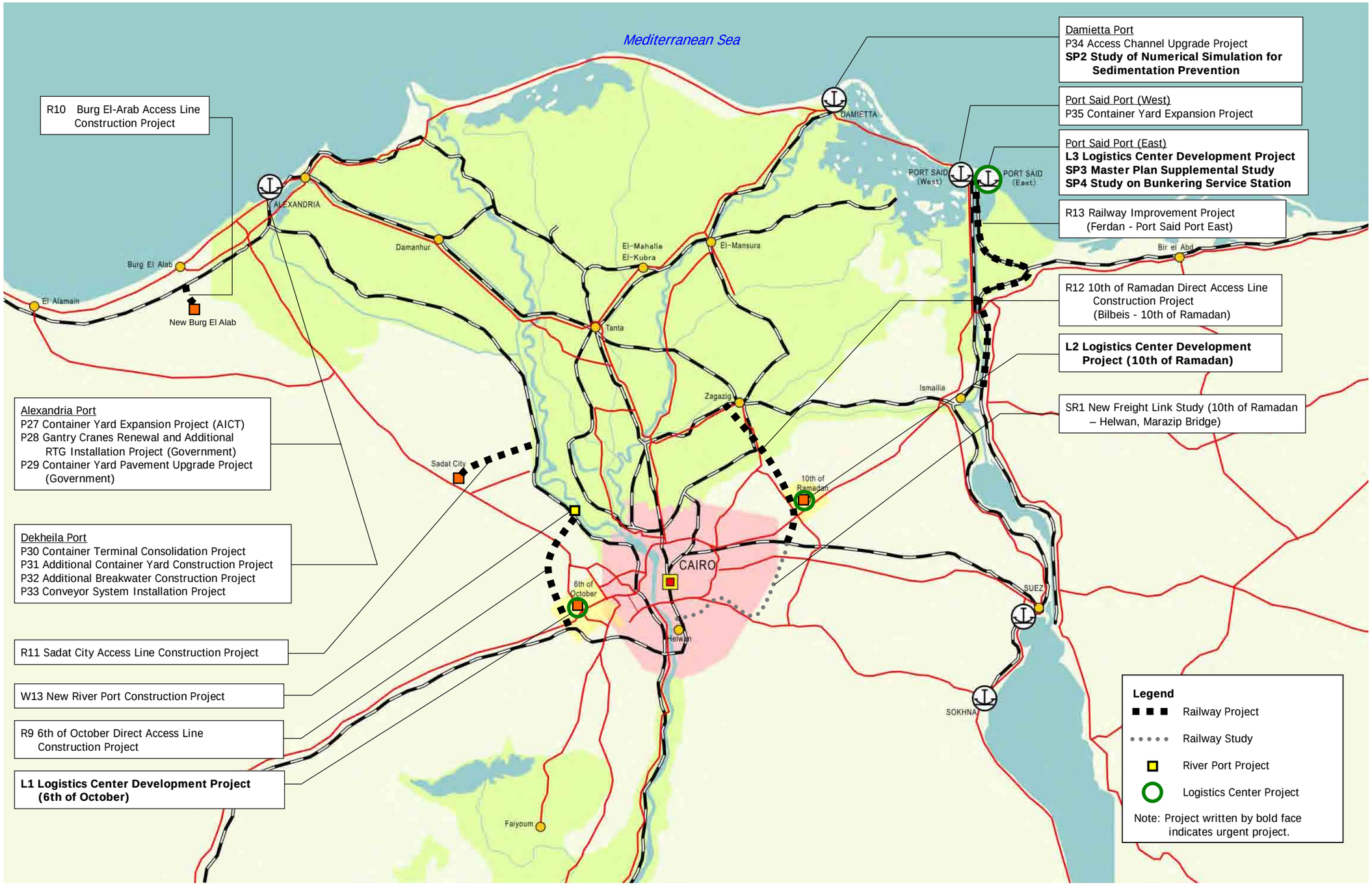
Issues
- Insufficient Water Depth
- Insufficient Area of Container Yard
- Heavy Congestion at Entry Gate


**Existing Plan of Port Said Port (East)**


Source: www.freefoto.com


Source: www.big-bremen.de

***Necessary Programs to Develop Logistics Industry***
- **Forwarding / Trucking Industry Service Enhancement**
- **Human Resource Development**
- **Legal Framework Improvement**
- **Financial Incentive**




Project Location Map

# Table of Contents

# 1. STUDY INTRODUCTION

In Egypt, industry and trade are the major factors determining the social and economic development of the nation, and their promotion is a focal task for the nation.

The Government of Egypt clearly sets the basic national strategy to promote its industries by strengthening trade linkages with the European Union (EU) and other regions in the world. This process reflects the deep involvement of the Egyptian economy in the international free market, where Egyptian products face severe competition and are strictly assessed for quality, timeliness, price competitiveness, and punctual delivery to the market. On the other hand, Egypt also has to procure industrial materials from foreign companies wherever they are located in the world. Therefore the total lead-time, i.e., the period of time that it takes for goods to be delivered from the time of order, punctuality, and cost are crucial factors in selecting trade partners. In the context of the expanding globalization, there is now a common awareness that transportation of freight is a key factor for companies to obtain a comparative advantage in international trade.

The existing transport development plans for Egypt, however, have been compiled independently by mode: maritime, road, railway, and inland waterway, resulting to insufficient intermodal connectivity and low overall system efficiency for export/import freight logistics. Comprehensive and intermodal solutions to optimize the logistics flows had not been built into the transport plans themselves. Furthermore, all the studies (except for inland waterways) were conducted more than ten years ago, and are now so out-dated that their analytical frameworks are hardly applicable to today's dynamically developing industries. Thus, Egypt needs to urgently prepare a comprehensive logistics development plan to fulfil current logistics needs and to reflect the change in freight traffic volume taking place now and in the future.

With this background, the Government of Egypt requested the Government of Japan to formulate a development strategy for a multimodal transport and logistics system. It includes a wide-range of fields, such as transport system logistics, improvements to inter-modal facilities, and the role of public administration. It also includes highlighting potential opportunities for public-private partnership (PPP).

In response to the request, the Government of Japan decided to carry out "The Study on Multimodal Transport and Logistics System of the Eastern Mediterranean Region in the Arab Republic of Egypt" (hereinafter referred to as "the Study"), and entrusted its execution to the Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of technical cooperation programs by the Government of Japan. After conducting two preparatory studies, JICA appointed the joint venture of Nippon Koei (NK) and Katahira & Engineers International (KEI) as the JICA Study Team for the Study. The JICA Study Team commenced the study in Egypt in November 2006.

## Objectives

Main Objective:

1) To formulate a logistics development master plan to promote export-import industries and foreign direct investment in Egypt, and consequently contribute to raising the living standards of the Egyptian people.

Objectives:

1) To disseminate the concept of logistics in Egypt, and to set logistics as one of the fundamental strategies to be fulfilled in transport and industrial development policies,
2) To prepare a master plan for multimodal transportation and logistics systems for Egypt, and
3) To prioritize proposed plans/projects.

## Scope of Study

Since the Study is the first logistics study in Egypt and little logistics data have been compiled, the Study commenced with the collection of data and information on logistics activities. Three kinds of Interview Surveys of about 500 companies, conducted by the Egyptian consultant company, "Transplan" headed by Dr. Ibrahim Ahmed El-Dimerry, helped the Study with the in-depth analysis of logistics fields.

The Study covers logistics facilities and activities, which include the following items:

1) Transportation infrastructure of all available modes except for air transport and intermodal facilities.
2) Freight handling efficiency of logistics-related industries. These are related to customs clearance and procedures, forwarding industries/activities, and logistics information network.
3) Fundamental human resource aspect. This relates to the government's capability in policymaking, and the abilities of employees for carrying out work required for the logistics industry. These highlight for policy makers the training requirements and also the need for technical training on logistics-related works in general.

## Study Management and Collaboration

The Study has been conducted in close coordination and collaboration with the Steering Committee, chaired by Eng. Hassan A. M. Selim, Vice Chairman of the Transport Planning Authority, Ministry of Transport. The Egyptian Counterpart Team, headed by Eng. Hassan A. M. Selim, also made a great contribution to the Study. Furthermore, participants at the workshops (2 times) and seminars (2 times) held by the JICA Study Team made valuable contributions, by providing their opinions and ideas in formulating the recommended projects.

## Structure of Reports

The Logistics Master Plan is presented in two separate volumes:

Volume 1: Executive Summary
Volume 2: Main Text

# 2. STUDY APPROACH

## 2.1 PRESENT STATUS OF EXPORT/IMPORT FREIGHT TRANSPORT

### Freight Flows

The total volume of the export/import freight of Egypt (except airfreight) is made up of the cargo handling volumes at the seaports of Egypt, which are summarized in Table 2.1. The total figure reaches 58.5 million tons, of which 40% is handled at Alexandria Port and Dekheila Port, followed by Damietta Port (31.8%), Port Said Port (West) (6.5%), Port Said Port (East) (1.1%) and Sokhna Port (5.7%). These are the major export/import gateways of Egypt. Port Said Port (East) and Sokhna Port have recently opened and the cargo handling volumes are increasing at remarkable rates because of their superior facilities, scale and advantageous geographical location.

The containerization ratio for Alexandria Port and Dekheila Port is about 40%, and 29% for Damietta Port, rather low figures, while those ratios for Port Said Ports (West and East) range from 88% to 98%. The figures below clearly show the functions of each port:

**Table 2.1 Import and Export Cargo Handling Volume in Each Major Port (2006)**

| | General Cargo (1,000 ton) | | Dry Bulk (1,000 ton) | | Liquid Bulk (1,000 ton) | | Container (1,000 ton) | | Special Cargo (1,000 ton) | | Total (1,000 ton) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Import | Export | Import | Export | Import | Export | Import | Export | Import | Export | |
| Alexandria | 1,993 | 1,399 | 1,336 | 1,187 | 218 | 1,267 | 1,494 | 939 | 1,755 | 135 | 11,723 |
| Dekheila | 2,803 | 440 | 4,023 | 1,226 | 145 | 1,001 | 1,312 | 603 | 38 | 0 | 11,591 |
| Damietta | 2,868 | 872 | 4,770 | 3,678 | 0 | 179 | 870 | 650 | 586 | 4,157 | 18,630 |
| Port Said (West) | 134 | 155 | 1,169 | 190 | 82 | 0 | 848 | 1,210 | 11 | 0 | 3,799 |
| Port Said (East) | 11 | 0 | 0 | 0 | 0 | 0 | 156 | 467 | 0 | 0 | 634 |
| Suez | 134 | 388 | 3 | 506 | 0 | 0 | 0 | 0 | 39 | 14 | 1,084 |
| Sokhna | 0 | 595 | 2 | 958 | 0 | 0 | 1,025 | 747 | 0 | 0 | 3,327 |
| Adabiya | 1,975 | 663 | 181 | 1,062 | 34 | 0 | 21 | 71 | 997 | 17 | 5,021 |
| Safaga | 103 | 157 | 1,316 | 1,095 | 15 | 6 | 0 | 0 | 31 | 4 | 2,727 |
| Total | 10,021 | 4,669 | 12,800 | 9,902 | 494 | 2,453 | 1,046 | 4,687 | 3,457 | 4,327 | 58,536 |

Source: Website of Maritime Transport Sector (www.mts.gov.eg)

**Table 2.2 Containerization Ratio and Transhipment Container in Each Major Port (2006)**

| Port Name | Containerization Ratio (%) | Transhipment Container (%) |
|---|---|---|
| Alexandria | 42 % | 1.5% |
| Dekheila | 37 % | 1.7% |
| Damietta | 29 % | 83.1% |
| Port Said (West) | 88 % | 77.3% |
| Port Said (East) | 98 % | 96.3% |
| Sokhna | 75 % | 17.0% |

Source: Website of Maritime Transport Sector (www.mts.gov.eg), arranged by the JICA Study Team

## Sea Transportation

Egypt now has three international hub ports: Port Said Port (West and East) and Damietta Port, which mainly handle the transhipment freight from Asia and Middle East to Eastern Mediterranean Sea countries and Europe. The newly developed Sokhna Port likewise plays a role as a gateway for export/import freight from Middle Asia and other regions in the world. On the other hand, Alexandria Port has been mainly handling export/import freight from medium scale vessels serving trade with Europe. Further enhancement of the freight handling capacity for Alexandria Port is necessary to cope with the increasing demand. Due to its narrow space, introducing various facilities within the port will be required to achieve this.

## Inland Transportation

### Road Transportation

An overwhelming share i.e. more than 90%, of the export/import freight is transported through the roads between the seaports and the production/consumption area, and this share has not changed much over recent years. This is because users, such as manufacturing companies in the industrial zones, prefer utilizing truck transport services due to the following advantages:

- Simple freight handling required.
- Door-to-door service, which is convenient for users.
- The average distance of export/import freight is shorter than 250 km, and truck transport service is therefore more price-competitive against railway and inland waterway transport services.
- Subsidized fuel cost, which is equivalent to one fifth of the international price.

However, a regular line-haul truck transport service on a fixed transport route is not available, and there are no logistics centers or container depots.

From the Upper Egypt region, the long distance freight of mining-related products, such as cement, fertilizer, aluminium etc, is transported to the seaports by truck.

### Railway Transportation

Up to now, the Egyptian National Railway focused its business effort on passenger transport and in general, freight transport service is limited to less than 5% in 2006. Furthermore, since the freight trains are operated on the same lines as the frequent passenger trains, freight train services are limited to night time, especially near the Greater Cairo Region (GCR). The role of the railway freight service cannot be enhanced as long as freight trains have to run throughout the GCR.

The railways are currently not being used for freight transportation of material imports and export products between the seaports and the industrial zones. This is mainly because:

- There are no direct access railway lines or no connectivity to the industrial zones
- The service distance of the major railway freight flows is shorter than the distance that makes the railway service can be competitive in price with truck services
- Loading/unloading operations for freight are not properly conducted

Under these conditions, container railway services have been used only for the transport of transit freight from the seaports for purposes of obtaining quicker and preferable customs clearance.

### Inland Waterway

Inland waterways provide four (4) major freight corridors connecting the GCR with the seaports: i) Cairo – Alexandria ii) Cairo – Damietta, iii) Cairo – Asyut – Aswan, and iv) Cairo – Ismailia. However, these mainly serve the bulk transportation for private companies.

The River Transport Authority has almost completed their development works of dredging for container navigation during the daytime except for Cairo and Ismailia. The issue in the container transport service is the lack of river ports. At present, there is no river port to handle the containers near the GCR. Especially, the planned river port improvements are not well coordinated with the accessibility to the industrial zones (6th of October and 10th of Ramadan), which is a crucial constraint for potential users.

The Cairo – Asyut – Aswan corridor is mainly used for sightseeing cruises, the number of which reaches more than 350 vessels. Conditions for freight transport are quite similar to the other corridors: companies use their private ports for their use only, and there is no public container port. However, there are some river port development plans which have been formulated.

## Intermodal Facilities and Forwarder

At present, majority of the freight is transported by truck. The loading/unloading of the containers at the seaports is relatively done efficiently. The intermodal facilities for the railways and/or inland waterways, meanwhile, have not yet been developed because of low demand.

Loading/unloading of railway containers outside the seaports is conducted by the consignee/consigner or the forwarding companies as their agent. They are requested to finish all the loading/unloading work within a limited time prescribed by the Egyptian National Railway. If actual work time exceeds the limited time, it is subject to a penalty.

In any case, the forwarders do not possess sufficient equipments for inter-modal transhipment because of their low financial capability.

## International Environment

The consigners are always exploring new international freight routes with a keen interest to secure the shortest lead time. In responding to the needs, the Panama Canal will be widened (completion in 2014 planned) and it is sure that this project will contribute to attract the freight flows from South-east or East Asia to Europe via this canal. As for the land transportation, the Siberia railway has activated its freight transportation services. At present, the share of this railway service is relatively small, however, in the long term, this railway route, as well as the Panama Canal, can have potential impact in changing the competitive status and the current freight transportation patterns.

Although the Study is just a conceptual plan, worldwide trends in infrastructure development for freight have been well reflected in the planning process. This is important in preparing the national logistics improvement plan for the export/import industry in order not to be left behind the trend.

# 2.2 APPROACH TO NEW FREIGHT TRANSPORT DEVELOPMENT

In the Study, a master plan was formulated based on the following vision, mission, and strategies:

## Vision

The final vision that the Study seeks through this Logistics Master Plan is "Sustainable Economic Growth", where a self-driven mechanism is built into the economy, in order to provide the benefit of higher living standards.

In case of Egypt, the government has aligned policy efforts to an export-led growth that inevitably entails foreign direct investment and a huge import volume of input materials, all within an improved investment environment.

## Mission

The mission of the Study is to improve the overall logistics efficiency in Egypt by providing speedy, competitive and punctual delivery system for both international and domestic freight flows, and thereby stimulating the Egyptian export industry.

The government and its investment policies will be core determinants of industrial performance in the future, which can be achieved to its fullest development only when an efficient logistics system is guaranteed.

## Strategies

The JICA Study Team pays attention to the following three aspects in the formulation of the logistics development master plan:

- Hardware aspect: Development of logistics infrastructure
- Software aspect: Development of supporting measures for supply chain management (SCM)
- Human resource development aspect

These three aspects involve various strategies that would provide business opportunities and benefits for Egypt if successfully implemented. Thus, after assessing the actual situation, nine strategies to be tackled in the Study were selected, as shown in Figure 2.1.

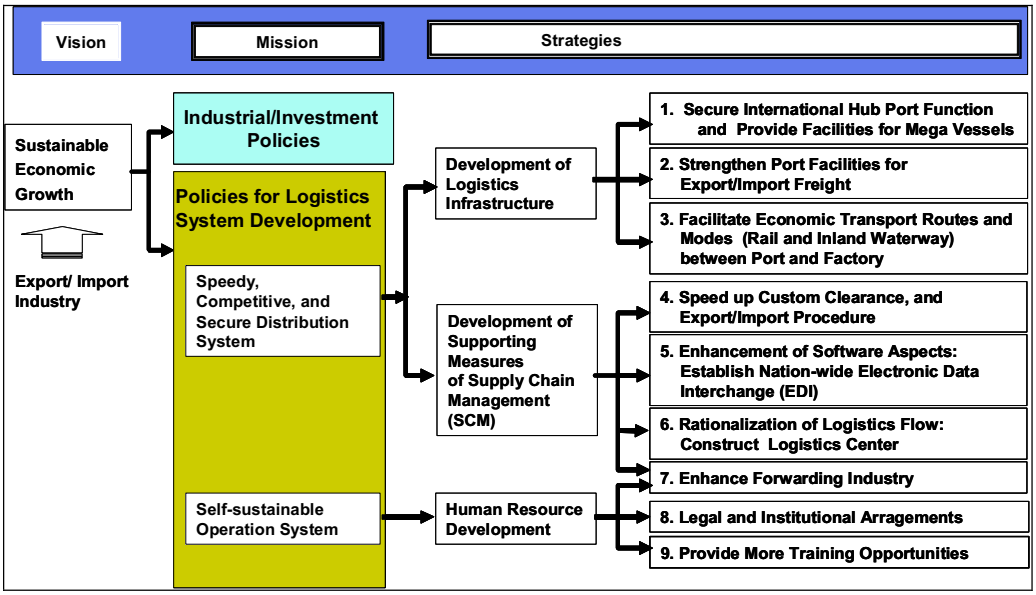



**Figure 2.1 Planning Process of Logistics Development Plan**

## Hardware Aspects: Development of Logistics Infrastructure

### Logistics Infrastructure: Maritime Sector

The world's maritime sector is now in the midst of a huge transformation process of replacing medium sized vessels to mega vessels. Some shipping alliances already have actual plans to replace the current Panamax level vessels (up to 5,000 TEU, berth depth of 14.0 m) with bigger Post-Panamax (8,000 TEU, berth depth of 15.0~16.0 m) or Super Post-Panamax container vessels (over 8,000 TEU, berth depth of 16.0~18.0 m). However, since the berth depth at Port Said Port (West) is not sufficient, it faces the risk of downgrading its function as an international hub port. If this happens, it would also result to a linkage break of direct economic logistics routes with the industrial zones in the hinterland. Freight from the Middle East and/or Asia has to come by a very long way round via European ports.

***Strategy 1: Secure international hub port functions in Egypt***

Development of deep berths is an urgent and indispensable task to secure the status of international hub ports for the transhipment business, targeting the EU market and the emerging markets in Eastern Europe via the Bosporus Strait.

***Strategy 2: Strengthen the port function for export/import freight***

This has been requested especially for Damietta Port and Port Said Port (West and East). At these ports, a linkage with industrial zones in the surrounding areas should be strengthened to fulfil the needs of locators in the industrial zones. It is also required to overcome the constraint on developing the freight handling capacity of Alexandria Port, and alternative port facilities should be further developed within a suitable time frame.

### Logistics Infrastructure: Inland Transport Sector

An efficient and smooth freight transport service is a major factor for the export-led industrial development in Egypt. Utilization of existing freight transport modes should be promoted by facilitating more efficient access to the industrial zones. This should be followed by a shift from a door-to-door service with one big truck to a new multi-modal transportation service via a logistics center. The Study also focuses on measures to improve routes from Upper Egypt to potential foreign markets.

***Strategy 3: Facilitate economic transport routes and modes (railway and inland waterway services) between ports and factories***

The current overwhelming share of road transport reaches more than 90% of all traffic. The JICA Study Team suggests that railway services be fully utilized to their potential capacities since they feature the advantages of "punctuality", "massive volume transport", and "environmental-friendliness" if operated properly. The inland waterway service also has advantages of the latter two, and these features, together with measures of cost reduction for users, can be realized by using logistics centers to facilitate the necessary accessibility.

## Software Aspects: Development of Supporting Measures for Supply Chain Management

***Strategy 4: Speed-up customs clearance, and export/import procedures***

Efforts have been made by the Customs Authority to speed up customs clearance and procedures, which have progressed remarkably in the last two or three years, by establishing a single window system and a computerized information system at major seaports between 2005 and 2007. Other supplementary measures are necessary.

***Strategy 5: Enhancement of the software aspects of the logistics industry***

The JICA Study Team paid attention to measures required to promote the use of Electronic Data Interchange (EDI). Maintenance and operation as well as a financial support for the forwarding companies are also crucial matters.

***Strategy 6: Rationalization of logistics flow: construct logistics centers***

At present, neither logistics centers nor container depots are available even around the GCR. Irrational freight flows in the vicinity of seaports naturally have been prevailing to deal with the constraint of the truck ban. With a logistics center, large line-haulers can shuttle between the ports and the logistics center, while small trucks can be utilized to collect and deliver freight from the logistics center to their origins and destinations.

***Strategy 7: Enhancement of the forwarding industry***

The overall logistics efficiency is dependent on the quality of service of the forwarding industry, which plays the role of integrating all the logistics activities. Therefore, enhancement of the forwarding industry is crucial for further export/import development. Some supporting measures are suggested as well as measures for human resource development in this industry.

## Human Resource Development

***Strategy 8: Legal and Institutional Arrangements***

At present, there is no government organization formulating and implementing national logistics policies. However, it is apparent that almost all the plans for logistics infrastructure and facilities require policy coordination among sectors. The JICA Study Team therefore suggests that the responsibility be shared between the government and private sector by setting up a representative core organization to coordinate policy development in the area.

***Strategy 9: Human Resource Development: Provide More Training Opportunities***

The human resource development focuses on two aspects: capacity enhancement of policy makers i.e. government staff, and capability building of actual workers engaged in the logistics business.

# 3. FREIGHT FLOWS AND GROWTH SCENARIO IN 2022

## Export/Import Item

Egyptian export commodities, at present, can be classified into two categories:

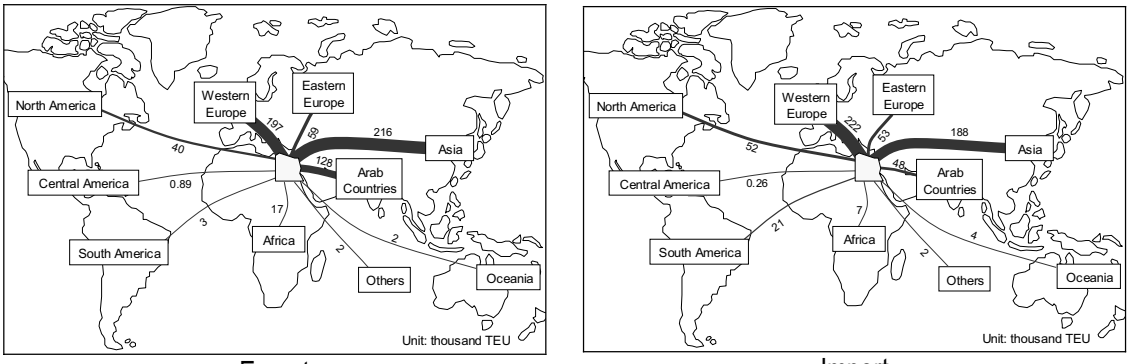
- Traditional primary resources, such as mining related ones, that are heavy commodities, including cement (26.0% in 2005), gaseous hydrocarbons (10.6%), phosphates (5.7%), gasoline (4.3%), salt (3.9%), rice (3.4%), sand, (3.1%) etc.
- New freight products, manufactured in the industrial zones, are expected to increase production rapidly to lead the economic growth. The characteristics of the products are; small (in size), light (in weight), and high value added (in value).

On the other hand, import commodities include wheat (14.0%), maize (11.8%), railway sleepers (4.6%), iron ore (4.5%), oil-seed fats (3.9%), gaseous hydrocarbons (3.7%), etc.

## Current Pattern of Export/import Freight Flows

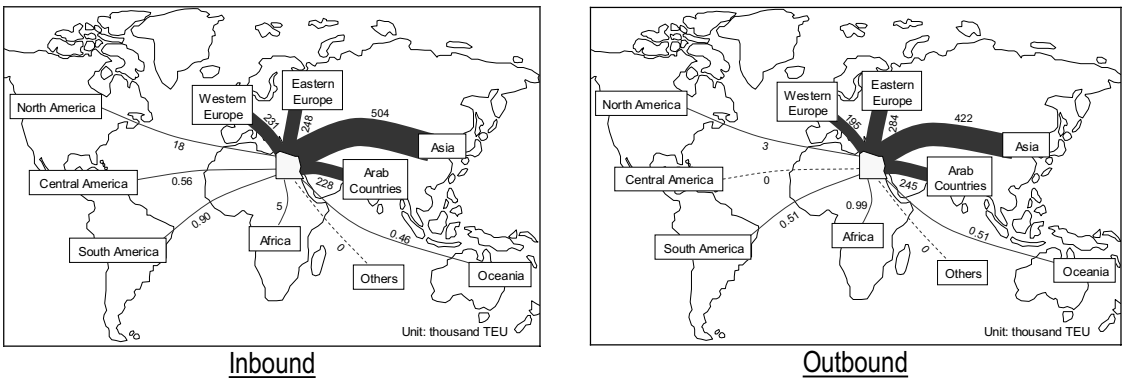
Egypt has been involved in two kinds of major freight flows as shown in Figures 3.1 and 3.2, respectively.

- Export and import freight flow, and
- Transhipment freight flow.




Source: Illustration by JICA Study Team based on Statistical Book 2005, Egyptian Maritime Data Bank

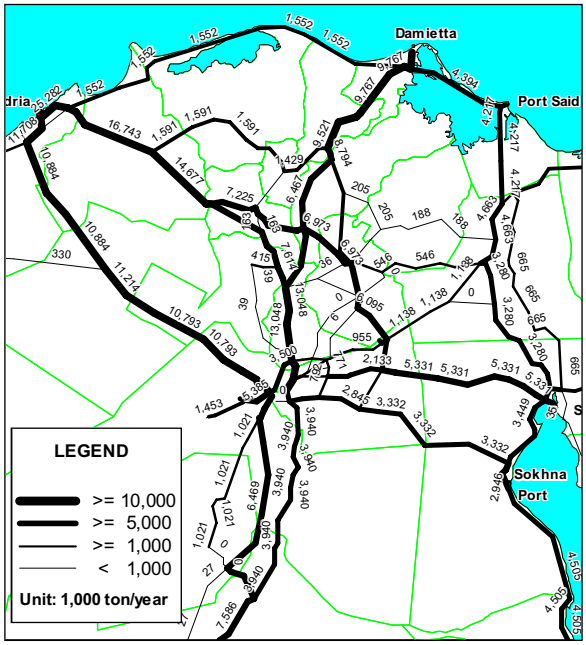
**Figure 3.1 Export and Import Container Volumes (Unit: Thousand TEU)**



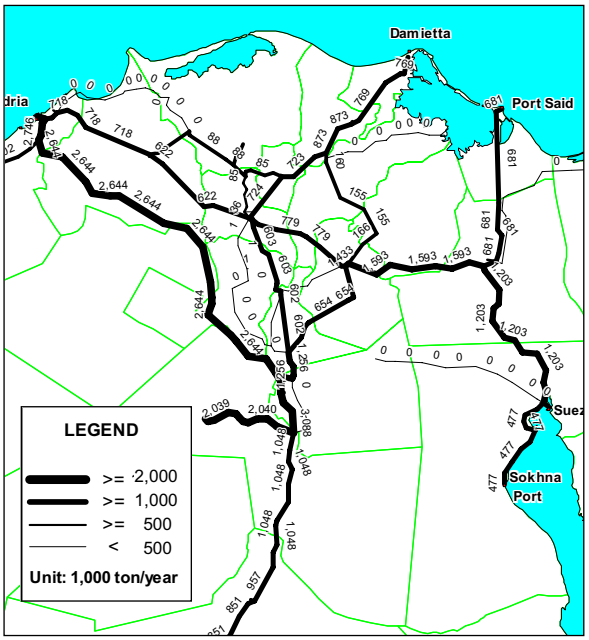

Source: Illustration by JICA Study Team based on Statistical Book 2005, Egyptian Maritime Data Bank

**Figure 3.2 Transhipment Container Volumes (Unit: Thousand TEU)**

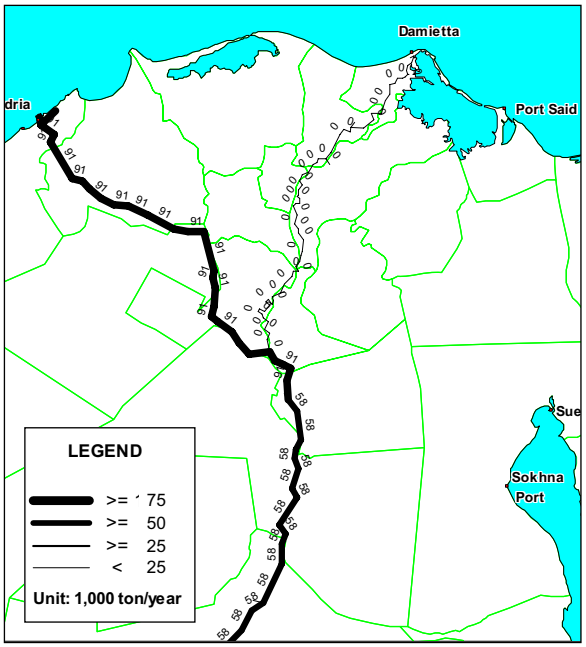
Current patterns of export/import freight flows to the surrounding areas are shown by transport mode in Figure 3.3. The patterns of freight flows will be affected by newly emerging industrial markets or by drastic expansion of productions in the existing industrial zones.




Truck




Railway




Inland Waterway

**Figure 3.3 Volume and Major Routes of Freight Flows by Transport Mode in 2005**

## Origin of Export/Import Freight

The pattern of inland transportation of export/import freight is related to industrial activities. These are mainly located in the Nile Delta region and along the River Nile. In the future, it is assumed that the general location pattern of industrial zones would remain almost the same as the present one. They are spread in:

- Alexandria –GCR,
- Port Said Port – GCR and its surrounding area, and
- Area along the River Nile (especially governorates of Asyut, Suhag, and Qena).

It is apparent that these areas, where manufacturing factories are concentrated, would be the main origin/destination of freight transportation in the future.

## Logistics Development Scenarios and Future Pattern of Export/Import Freight Flows

Future economic growth of the GDP will determine the volume of freight. The JICA Study Team adopted a more moderate growth scenario, setting it at 6.9%, which is the GDP rate in 2006. This rate is assumed as constant percentage during the next five years and the following period up to 2022. In the five-year economic development plan 2008 – 2012 (preliminary figure, as of July 2007), it is set at 9.3%. Figure 3.4 shows the two scenarios and their difference.

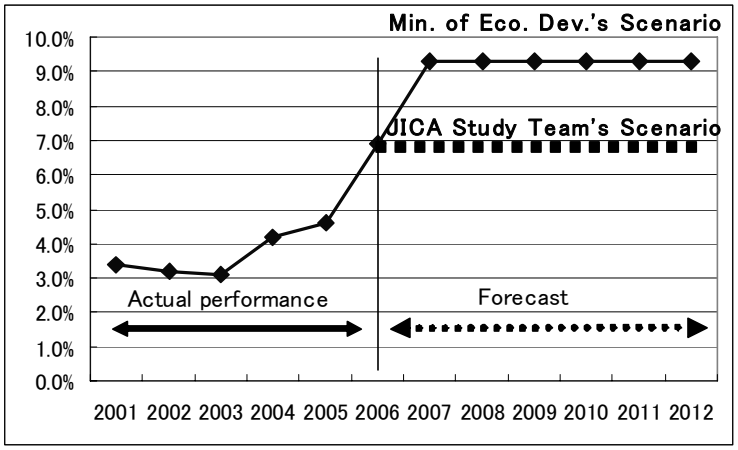



**Figure 3.4 GDP Growth Rate: Actual Performance and Future Scenarios**

Based on the above growth rates up to 2022, the estimated total volume of export/import freight in 2022 will increase 2.7 times as much as that in 2005. This is shown in Table 3.1. Table 3.2 shows the cargo handling volume by transport mode in 2022 and the modal share.

Patterns of export/import freight flows in 2022 are shown by mode in Figure 3.5.

**Table 3.1 Future Growth of Cargo Volume at Four Major Ports**

(Unit: 1000 ton/year)

| Major Ports | 2005 | | 2022 | | Expansion Rate (2022/2005) |
|---|---|---|---|---|---|
| | Volume | Share | Volume | Share | |
| Alexandria & El-Dekheila Ports | 40,344 | 53% | 82,920 | 40% | 2.1 |
| Damietta Port | 17,411 | 23% | 50,059 | 25% | 2.9 |
| Port Said Port & East Port Said | 3,154 | 4% | 15,084 | 7% | 4.8 |
| Sokhna Port | 3,440 | 4% | 11,483 | 6% | 3.3 |
| Others | 11,966 | 16% | 46,856 | 22% | 3.9 |
| Total | 76,315 | 100% | 206,402 | 100% | 2.7 |

Source: Estimated by JICA Study Team

**Table 3.2 Cargo Volume by Transport Mode in 2022 and the Modal Share**

(Unit: 1000 ton/year)

| Major Ports | Truck | Railway | Inland Waterway | Total |
|---|---|---|---|---|
| Alexandria & El-Dekheila Ports | 75,190 | 6,940 | 790 | 82,920 |
| Damietta Port | 47,221 | 2,682 | 156 | 50,059 |
| Port Said Port & East Port Said | 14,167 | 917 | 0 | 15,084 |
| Sokhna Port | 10,701 | 782 | 0 | 11,483 |
| Others | 42,300 | 4,556 | 0 | 46,856 |
| Total | 189,579 | 15,877 | 946 | 206,402 |
| Modal Share (%) in 2022 | 91.8% | 7.7% | 0.5% | 100.0% |
| Modal Share (%) in 2005 | 90.7% | 9.0% | 0.3% | 100.0% |

Source: Estimated by JICA Study Team

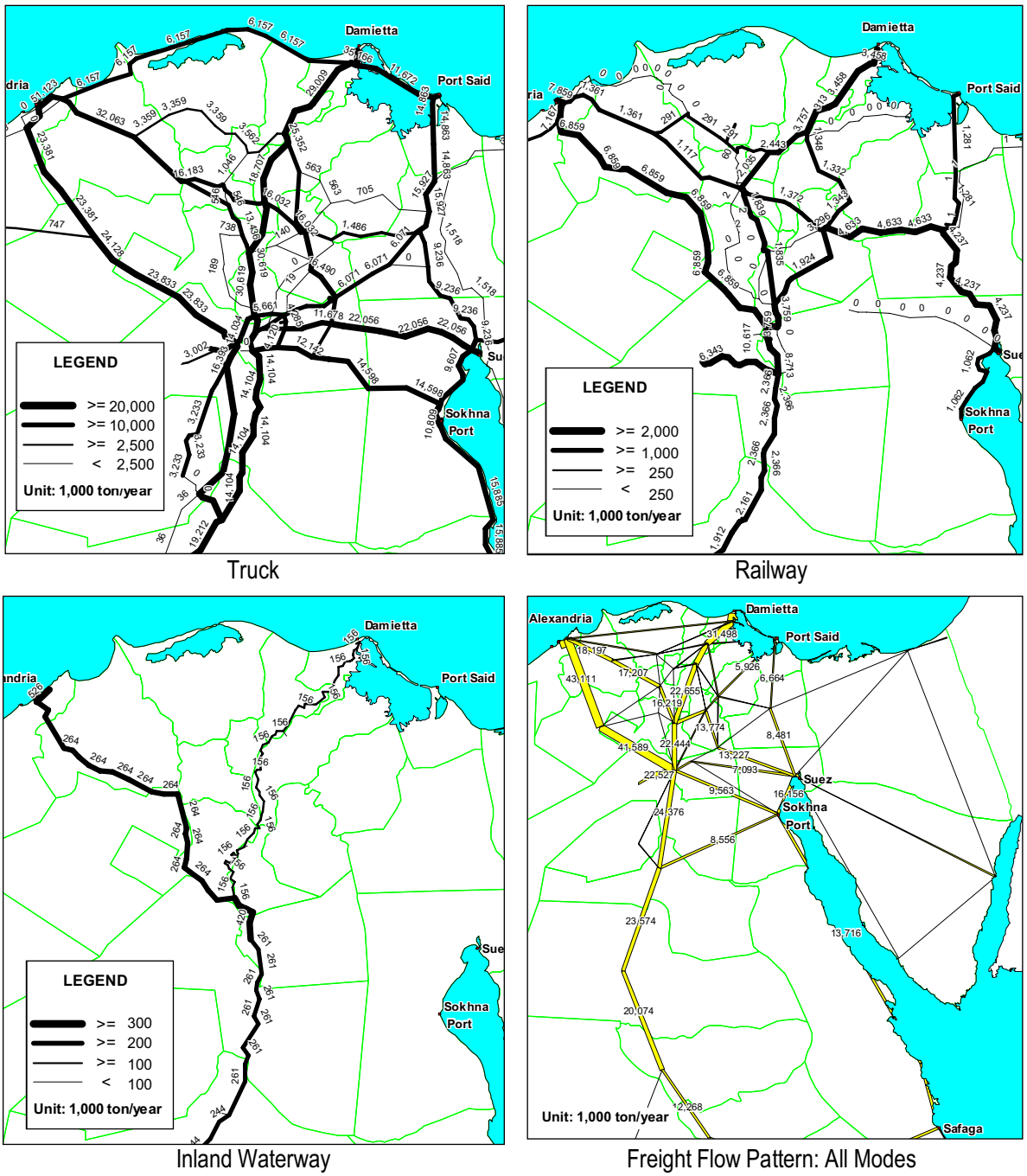



**Figure 3.5 Volume and Major Routes of Freight Flows by Transport Mode in 2022**

# 4. DESIRED DEVELOPMENT PLAN

## 4.1 MARITIME FREIGHT TRANSPORTATION

### 1) SECURING INTERNATIONAL HUB PORT FUNCTION

Port Said Port (West) and Damietta Port are facing the risk of being downgraded of their status as international hub ports. This is because these ports do not have sufficient facilities for large container vessels of more than 8,000 TEU, which will commence service within two or three years. Without satisfying the urgent need of increasing the berth depth, the shipping alliances may shift their hub port functions to other ports in neighbouring foreign countries. Port Said Port (West) is short of a deep berth of more than 16 meters, and Damietta Port has shallow and narrow navigation channel in addition to sedimentation problem.

Development of potential deep berth at Port Said Port (East) requires at least another 10 or 15 years. Once this kind of hub port function is transferred to foreign ports, it will be difficult for Egypt to easily restore the international hub port status. It means that major part of the revenue source of the port authority from transhipment containers (96% of total container handling volumes in 2006) will be lost, and the revenue source will be limited to only export/import container handling volumes (4% in 2006).

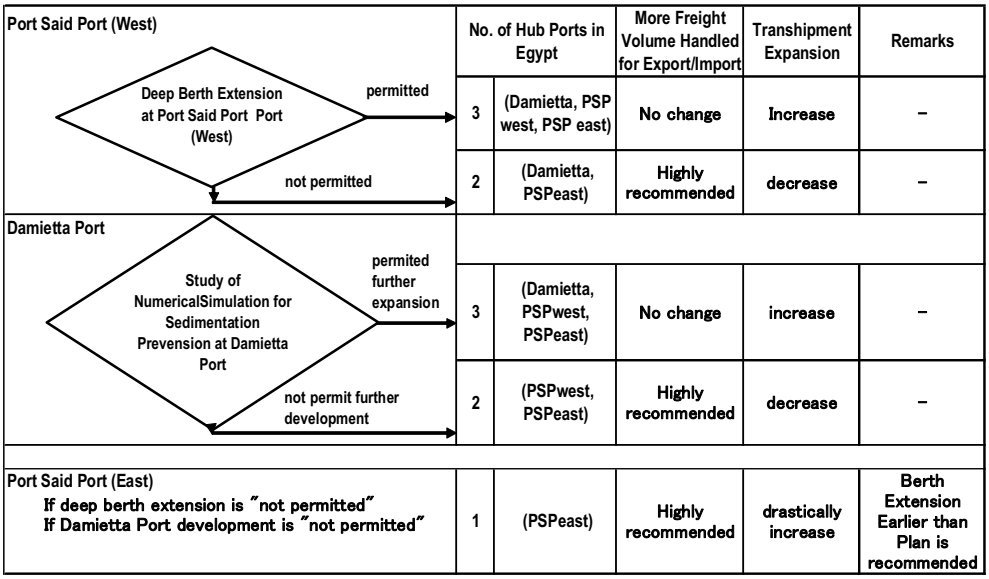
Urgent countermeasures:

- Port Said Port (West): Construction of additional deep berth (400 m in length, 16 m in depth)
- Damietta Port: Execution of numerical study for sedimentation control, and preparation of definite development plan as well as assessment of the project feasibility. If approved, the development plan should be implemented at the earliest possible time.

Long-term countermeasure:

- A development plan for Port Said Port (East), to especially include the development of deep berth (after 3rd phase development), that can handle the freight handling overflows of Port Said Port (West) and Damietta Port.

Figure 4.1 shows the diagram of the planning process. If the deep berth extension at Port Said Port (West) is not executed within an appropriate timeframe, the function of the hub port will decline. If the sedimentation prevention measures for Damietta Port are not executed, another international hub port may be lost, leaving only one in the whole of Egypt.




| | No. of Hub Ports in Egypt | | More Freight Volume Handled for Export/Import | Transhipment Expansion | Remarks |
|---|---|---|---|---|---|
| Deep Berth Extension at Port Said Port Port (West) → permitted | 3 | (Damietta, PSP west, PSP east) | No change | Increase | – |
| Deep Berth Extension at Port Said Port Port (West) → not permitted | 2 | (Damietta, PSPeast) | Highly recommended | decrease | – |
| Damietta Port | | | | | |
| Study of NumericalSimulation for Sedimentation Prevension at Damietta Port → permited further expansion | 3 | (Damietta, PSPwest, PSPeast) | No change | increase | – |
| Study of NumericalSimulation for Sedimentation Prevension at Damietta Port → not permit further development | 2 | (PSPwest, PSPeast) | Highly recommended | decrease | – |
| Port Said Port (East)<br>If deep berth extension is "not permitted"<br>If Damietta Port development is "not permitted" | 1 | (PSPeast) | Highly recommended | drastically increase | Berth Extension Earlier than Plan is recommended |

Source: JICA Study Team

**Figure 4.1 Planning Flow of Port Development**

## 2) STRENGTHENING OF FACILITIES FOR EXPORT/IMPORT FREIGHT

Some measures to improve container handling efficiency and capacity are suggested for each port: these include container yard expansion, change in layout, introduction of gantry cranes and RTGs, and so on. Most urgently, Alexandria Port requires the implementation of projects for the improvement of freight handling efficiency since the area is limited and is facing an increasing demand for freight handling at the port. Other ports require more freight handling capacity that requires more space.

# 4.2 INLAND EXPORT AND IMPORT FREIGHT TRANSPORTATION

The JICA Study Team identified five (5) freight corridors and two (2) potential corridors that are necessary for regional development in the future. The characteristics and features are different for each corridor, and thus the required logistics development policies are summarized by corridor.

## 1) INLAND FREIGHT CORRIDOR 1: ALEXANDRIA PORT - CAIRO

**Aims**

The overall aim for Corridor 1: Alexandria Port-Cairo Corridor is to improve freight transportation capacity and transport efficiency:

- **Port section:** Improvement of freight handling efficiency at Alexandra Port
- **Inland section:** Promotion of railway and inland waterway services
- **Other consideration:** Improvement of freight flow efficiency

**Solutions**

**(1) Port section**

Alexandria Port can achieve the aims by **introduction of new gantry cranes and RTGs together with container yard pavement improvements.** Use of the land just behind the AICT container terminal is also recommended.

As for Dekheila Port, the JICA Study Team recommends **a consolidation of the current container yards** that are used inefficiently, and construction of new container yard by using the currently empty land areas in and adjacent to the port. **Installation of conveyor system** is also recommended.

**(2) Inland section**

- **Construction of new railway access line for export/import of freight to the 6th of October industrial zone.**

The railway freight service along this corridor can be promoted by constructing new railway short-cut access line directly connecting the 6th of October industrial zone with the existing freight line (Alexandria – El Ithad – Imbaba El-Giza), instead of going the long way around through Helwan. Usage of the current freight exclusive line is favourable to users who are sensitive to punctual delivery. In addition, loading/unloading space and equipment should be provided at the industrial zone to contribute to the improvement in the railway freight services.

- **Improvement of existing river ports and construction of a new river port near the 6th of October industrial zone**

River Transport Authority has already completed the canal improvements and it is now ready for use for container transportation during the daytime. The JICA Study Team therefore recommends the construction of **a new public river port near the 6th of October industrial zone** and the improvement of the current two river ports in the GCR. The canal will be the most suitable for cost-sensitive but time-insensitive freight.

- **Road network development**

Road network development can be achieved with good coordination between passenger

and freight traffic. The construction of the planned regional ring road will contribute to alleviating the traffic congestion. As of September 2007, civil works and a detailed study on the regional ring road are already in progress.

**(3) Other Consideration**

The JICA Study Team recommends the construction of a key logistics facility i.e. **logistics center (composed of customs clearance facility, distribution/processing facility, container depot, truck terminal, etc.)**, which can store products/materials for value-added activities such as labelling, re-packing, and so on.

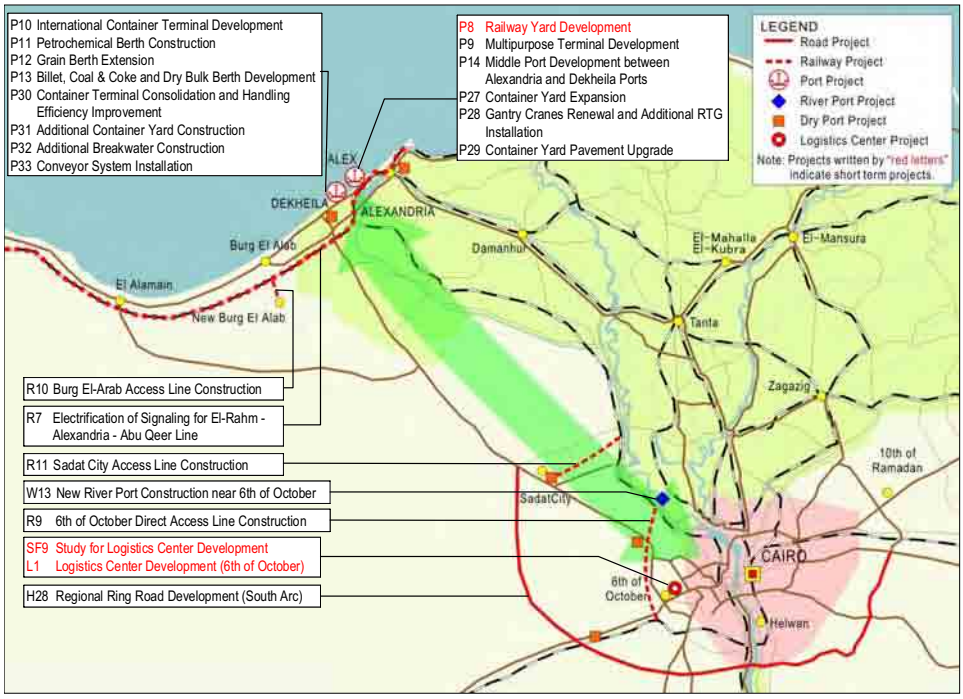



**Figure 4.2 Recommended Projects for Corridor 1**

## 2) INLAND FREIGHT CORRIDOR 2: DAMIETTA PORT – 10TH OF RAMADAN/CAIRO

**Aims**

The overall aim for Corridor 2: Damietta Port-10th of Ramadan/Cairo Corridor is the guarantee of international hub port function and the improvement of freight transportation capacity.

- **Port section:** Guarantee of the international hub port function and improvement of the freight handling capacity at Damietta Port
- **Inland section:** Strengthening of overall inland transportation of this corridor, and provision of railway and inland waterway services
- **Other consideration:** Improvement of freight flow efficiency

**Solutions**

**(1) Port section**

First, **a numerical simulation study for sedimentation prevention** is recommended. After confirming the most effective solution for sedimentation control and once the feasibility assessment had been conducted, various projects should be implemented. Depending on the results of the proposed numerical study, **the construction of new breakwater and upgrading (widening) of the access channel to depth of 17 meter** may be suggested for the purpose of guaranteeing the international hub port function,

Expansion of the KGL terminal is also required to handle containers more efficiently and to increase its handling capacity.

**(2) Land section**

- **Construction of new railway access line for export/import**

At present, there is no freight railway service along the corridor because of the lack of direct access line to the 10th of Ramadan industrial zone. By constructing **new railway access line** directly connecting between the 10th of Ramadan industrial zone and the Suez – Ain Shams line, (Bilbeis – 10th of Ramadan – Al Robeki Station on the Suez – Ain Shams line), the new railway freight service would serve for the freight demand along this corridor.

- **New river port construction near Bilbeis**

The construction of new river port near Bilbeis would be studied in the long-term and aimed at transporting freight from the Upper Egypt area as well as Damietta Port. The potential freight covers mining-related heavy products and agro-products.

**(3) Other Consideration**

The JICA Study Team recommends the construction of **a logistics center in the 10th of Ramadan industrial zone**, to serve the industrial zone and mega consumption area. This has the same purpose and facility components as that in the 6th of October industrial zone.

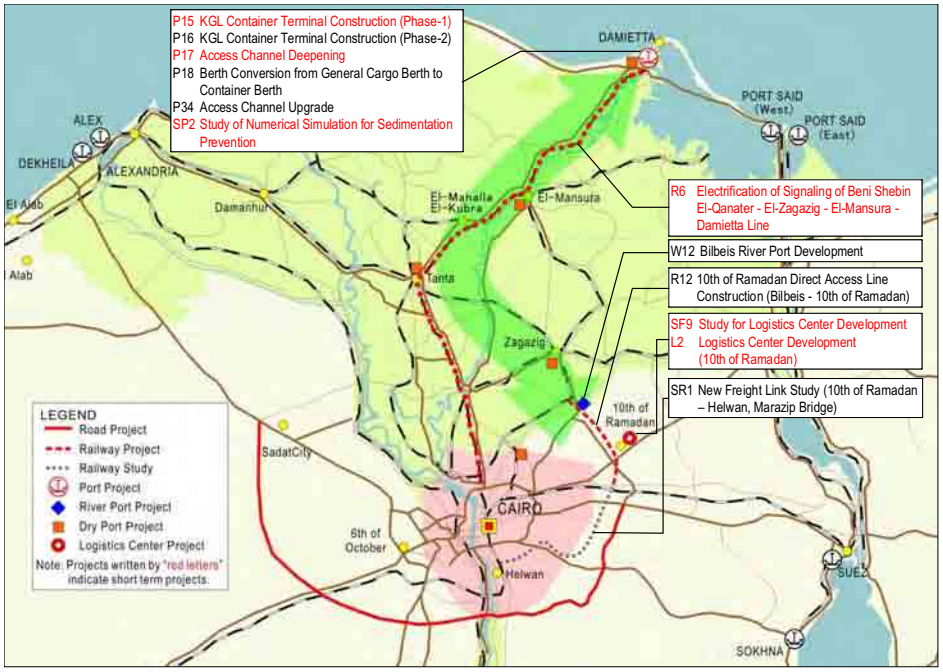



**Figure 4.3 Recommended Projects for Corridor 2**

## 3) INLAND FREIGHT CORRIDOR 3: PORT SAID PORT (WEST) – 10TH OF RAMADAN/CAIRO

**Aims**

The overall aim for Corridor 3: Port Said Port (West) – 10th of Ramadan/Cairo Corridor is the guarantee of international hub port function and the improvement of freight transportation capacity.

- **Port section:** Guarantee of international hub port function, and an improvement of freight handling capacity and efficiency
- **Inland section:** Promotion of railway service
- **Other consideration:** Improvement of freight flow efficiency

**Solutions**

**(1) Port section**

The JICA Study Team concludes that the provision of deep berth is urgently required to confirm and maintain the status of Port Said Port (West) as an international hub port, and recommends **the construction of deep berth (400 m, -16m)** at least prior to the completion of the 3rd, 4th, and 5th development plans for Port Said Port (East). This should be implemented together with **expansion of the container yard**.

**(2) Inland section**

This is similar to that for the Damietta Port – 10th of Ramadan/ Cairo Corridor. Since export/import freight volumes transported between Port Said Port (West) and the industrial zones, the promotion of rail freight services by constructing **new access line between Bilbeis – 10th of Ramadan industrial zone – Al Robeki Station** is indispensable. Furthermore, **its extension to the 6th of October industrial zone should be studied** in more depth to make sure that it can cope with the freight flow to and from Port Said Port (West).

**(3) Other Consideration**

The JICA Study Team recommends the construction of a **logistics center in the 10th of Ramadan** industrial zone in the same way as that in the 6th of October industrial zone.

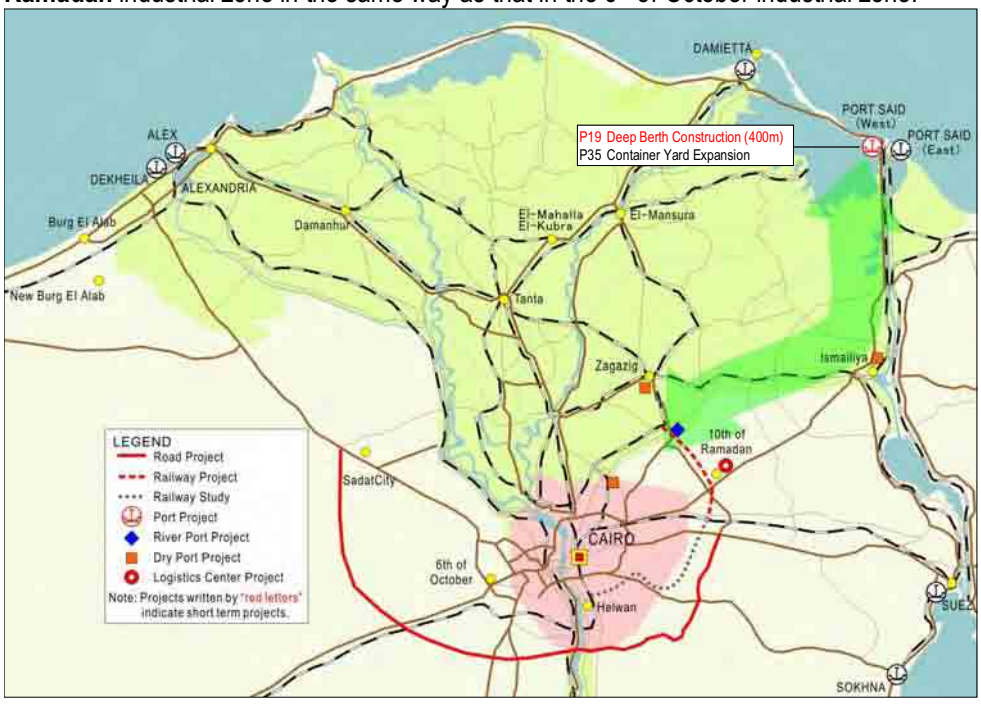



**Figure 4.4 Recommended Projects for Corridor 3**

## 4) INLAND FREIGHT CORRIDOR 4: PORT SAID PORT (EAST) – 10TH OF RAMADAN/CAIRO

**Aims**

A drastic increase in freight transport demand can be expected from Port Said Port (East) to the 10th of Ramadan/Cairo/6th of October areas. However, no specific transportation development is required for the corridor up to 2022. After the transportation demand exceeds the current transport capacity as a whole after 2022, some infrastructure development may be required when the industrial zone just behind the port area develops into a manufacturing center.

- **Port section:** Smooth implementation of port development plan
- **Inland section:** None up to 2022
- **Other consideration:** Improvement of the transhipment function of the port

**Solutions**

**(1) Port section**

**Review of the current port development master plan** is recommended since it is apparent that the planned water area for the turning basin and approach channel is too narrow for the expected number of vessels. In addition, the current road network plan in the industrial zone might cause traffic jams and result in inconvenient traffic flows.

**(2) Inland section**

It is apparent that the current railway bridge is inconvenient to use as it can only be used two times a day and only for three hours for each time. In the future, a new tunnel under the Suez Canal may be necessary for the railway, but it is anticipated that this will not be necessary until after 2022 and far later.

**(3) Other Consideration**

The JICA Study Team suggests the construction of **a logistics center in Port Said Port (East)** in the same way as that in the 6th of October industrial zone. It should be timed when industrial development has begun just behind Port Said Port (East).

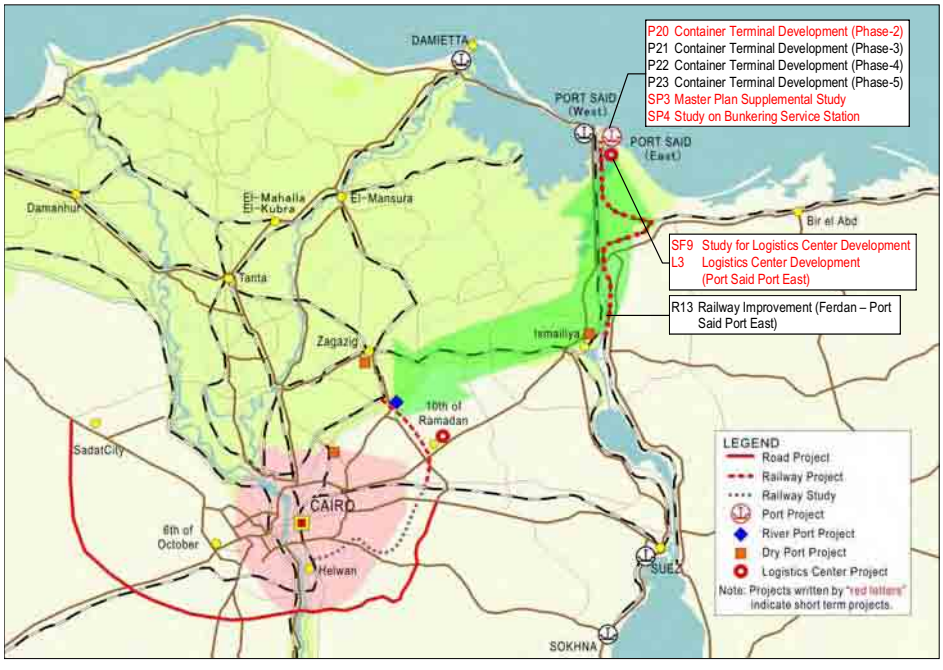



**Figure 4.5 Recommended Projects for Corridor 4**

## 5) INLAND FREIGHT CORRIDOR 5: SOKHNA PORT – 10TH OF RAMADAN/CAIRO/6TH OF OCTOBER

**Aims**

Before the transportation demand exceeds the current transport capacity as a whole, some infrastructure development will be required only when the industrial zone just behind the port area develops into a manufacturing center.

- **Port section:** None
- **Inland section:** Promotion of rail service
- **Other consideration:** None

**Solutions**

**(1) Port section**

There are no specific suggestions for the improvement of logistics at Sokhna Port. The management of the first stage development is flexible in such a way that they have implemented the best measures to fulfil the demands of users.

**(2) Inland section**

The construction of **a new railway line between Bilbeis and Al Robeki Station on the Suez – Ain Shams line** can provide direct access to the 10th of Ramadan industrial zone, on the way to Alexandria Port or Damietta Port. The JICA Study Team thus recommends that **a study be carried out on a new freight link network between 10th of Ramadan (Al Robeki Station) and Helwan (Maraziq Bridge).** The study will be conducted to investigate the rationale of the railway network for container freight, which runs around the Nile Delta, and to assess if this link would provide an economic and short route from Sokhna Port to the 6th of October industrial zone. In this proposed study, the potential for the private sector to take part in providing the freight transport service should also be explored.

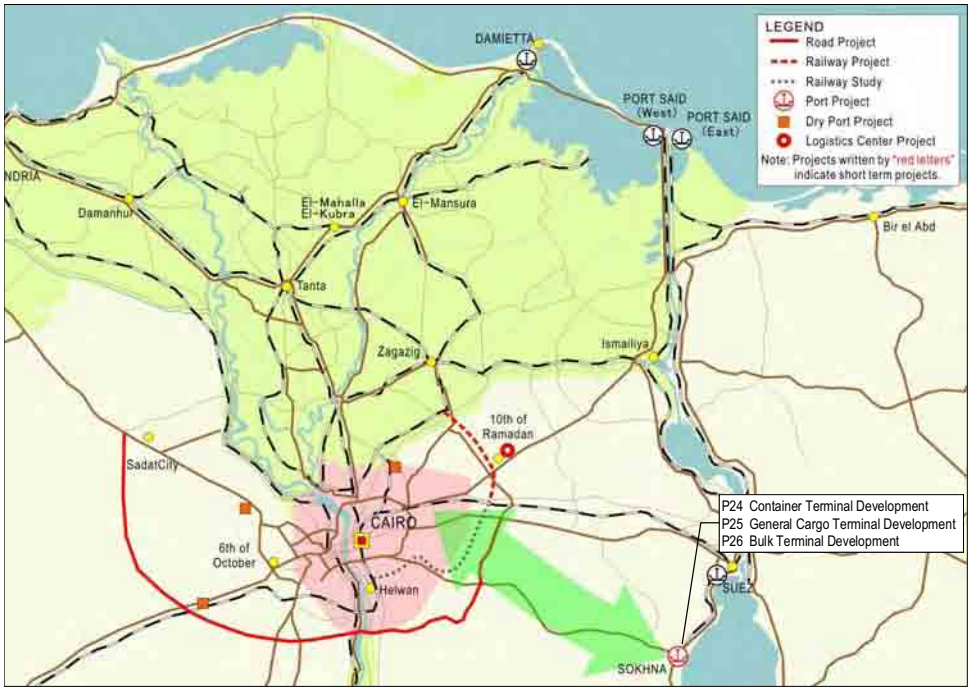



**Figure 4.6 Recommended Projects for Corridor 5**

## 6) INLAND FREIGHT CORRIDOR 6: QENA – SAFAGA PORT

**Aims**

For Corridor 6: Qena-Safaga Port, the aim is to trigger the economic development in this region.

- **Port section:** Development of container transportation
- **Inland section:** Promotion of road transportation
- **Other consideration:** Support for regional development

**Solutions**

**(1) Port section**

Reefer containers require to transport fresh agro-products and to keep vegetables fresh. The Safaga multi-purpose berth development project aims at making it possible to handle the reefer containers for export.

**(2) Inland section**

Egyptian National Railway should provide the reefer container transport service by purchasing railway wagons Road improvement of the Qena – Safaga section can also contribute to smooth and safe transportation services.

**(3) Other consideration**

Collection and packing of agro-products requires speedy and careful handling and skills. Local collection and packing systems should be established together with the development of the logistics infrastructure. Such systems have been introduced by large agro-business companies and farmers' cooperatives around the world, and thus no difficulty is anticipated for Egypt to introduce the system. An agricultural logistics study for a specific area would be worth.


**Figure 4.7 Recommended Projects for Corridor 6**

## 7) INLAND FREIGHT CORRIDOR 7: UPPER EGYPT – CAIRO

**Aims**

For Corridor 7: Upper Egypt – Cairo, the goal is to initiate the economic development in the region and strengthen the linkage of freight transportation with Upper Egypt and Greater Cairo Region.

- **Inland section:** Promotion of railway and inland waterway services for freight transportation
- **Other consideration:** Support for regional development

**Solutions**

**(1) Port section**

At present, there is no large scale inland waterway service for freight transportation by public use. This is due to the lack of river ports for freight. The distance between Aswan and Cairo is 960 km. The inland waterway service can be competitive in terms of transport cost with other transport modes. Therefore, the inland waterway services could be favoured by cost-sensitive users, especially for heavy freight. The JICA Study Team recommends that there should be **a feasibility study on the River Nile freight transportation**. The feasibility study would explore the rationale for the Qena river freight port construction plan, and the El Hadid and El Solb river freight port construction plans (Aswan).

As for the industrial zones located along the River Nile, some have failed to attract investors because of the lack of suitable access roads connecting to the trunk road. It is suggested that paved roads should be constructed to access any future new factories.

**(2) Other consideration**

This corridor development aims at accelerating regional development, not at improving the efficiency of logistics in the corridor. Thus, even a lower investment return as measured by the value of the economic internal rate of return, can be accepted to allow implementation.

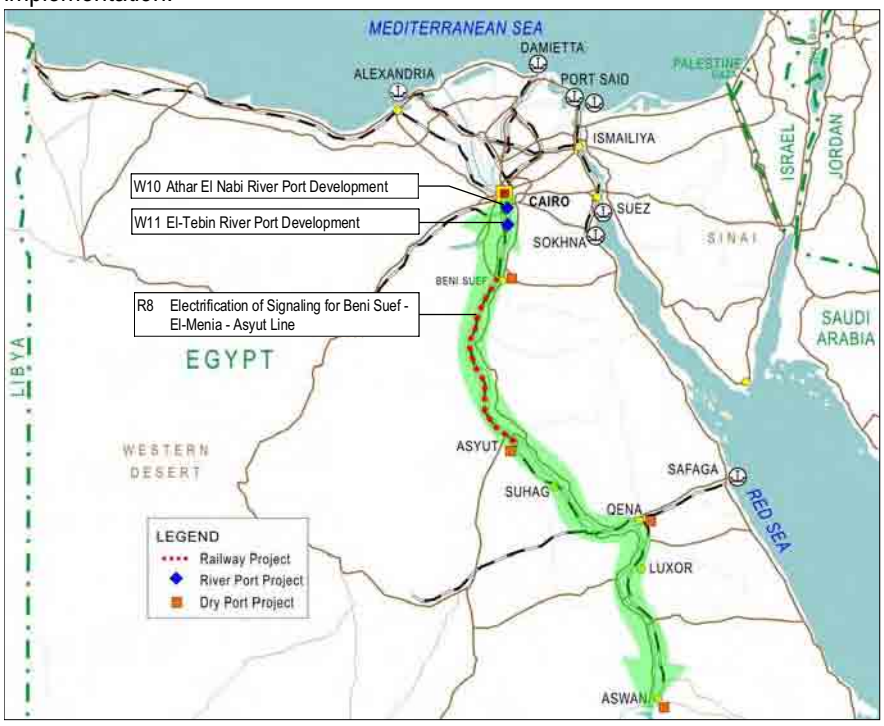



**Figure 4.8 Recommended Projects for Corridor 7**

## 4.3 SPEED-UP OF CUSTOMS CLEARANCE AND PROCEDURES

**Aims**

Supplementary measures are necessary to expedite customs clearance and procedures:

- To simplify the procedure, and to improve the efficiency of customs clearance and procedures; and
- To shorten the release time of freight and increase the freight handling volume at the ports.

**Solutions**

The introduction of EDI and the single window system has been completed. Therefore, it is suggested that the system be monitored and necessary countermeasures applied immediately when problems are discovered. EDI connectivity within the ports is quite reliable; however, there is still no connectivity to forwarding companies and the truck industry. This is also a subject for improvement.

World experience indicates that a parallel procedure of customs clearance works and General Organization for Export and Import Control (GOEIC) procedures be adopted instead of the present serial procedure. Another suggestion is to allow the use of a copy of the B/L instead of the original one.

Many of dry ports have not yet installed the EDI system nor developed a computerized procedure, and thus, the manual procedure has resulted in lower efficiency in the dry ports than that at the seaports. This gap can negate the envisioned function of a dry port. In addition, the number and allocation of dry ports should be rationalized based on the principle of one dry port per area.

Advertising the current performance to shorten the release time for customs clearance could be used to attract new foreign direct investment to Egypt.

## 4.4 ENHANCEMENT OF SOFTWARE ASPECTS: ESTABLISHMENT OF NATION-WIDE EDI SYSTEM

**Aims**

- To enhance the business capability of the logistics industry
- To improve the service quality of the logistics industry to fulfil users' satisfaction
- To make it easier for companies to conduct SCM operation.

**Solutions**

**Progress has been made with the introduction of EDI in the customs office at the seaports, while many of the dry ports in industrial zones are kept behind in this trend.** Connectivity to the EDI system is also urgently required for the forwarding industry and truck transport industry**. Web-EDI system is suggested. This system can also contribute to improving the service quality. However, as many of these companies are small- or medium-scale, their financial base is vulnerable. Some** form of financial support could therefore be introduced **to promote the EDI system in the logistics industry.** The financial support should be promoted together with **a training system for operators**. In addition, EDI can be a pre-condition for approval of a forwarding business so that the basic quality of services of forwarding companies can be raised and kept sufficient to satisfy users.

# 4.5 RATIONALIZATION OF LOGISTICS FLOW

## 1) LOGISTICS CENTER DEVELOPMENT

### Definitions

The JICA Study Team recommends the construction of two logistics centers near the GCR.

There are many facilities that have similar functions, and they are defined below. To ensure smooth freight traffic flows around the GCR, a wide range of functions should be integrated into the system, as any single function below may not be sufficient.

**Table 4.1 Definitions of Logistics Center and Others**

| Item | Brief definition |
|---|---|
| Logistics center | No clear standard definition is given, but it is a hub where all the activities relating to transport, logistics, and freight distribution are carried out, and it integrates the functions of a distribution center, dry port and truck terminal into one. This center facilitates the most advanced IT system, and conducts the widest range of value-added activities. |
| Distribution center | Facilities that mainly serve transhipment from long distance traffic to short distance (urban) traffic, aiming at distribution efficiency. Re-packing and/or assembling are also conducted here as well as other value-added activities. |
| Dry port | A bonded site of logistics facilities for customs clearance and temporary storage, located far from seaports. |
| Truck terminal | Facility where goods are transferred between trucks without any value-added activities. |

### Aims

To make freight flows more efficient and convenient for users by developing the functions that the logistics center can provide, which include, among others, the following: a) punctual collection and delivery of freight, and b) provision of value-added activities such as repacking, labelling, bar-coding, light assembly, and quick and simple customs clearance.

Most export/import freight has its destination or origin in the GCR and its outskirts, and the proposed logistics center should serve two major functions: First is the bonded customs clearance function for industrial freight, and second is the collection and delivery function from/to the big market of consumer goods. Some value-added activities are possible for both.

### Solutions

The JICA Study Team recommends the construction of the 6$^{th}$ of October and the 10$^{th}$ of Ramadan logistics centers. Prior to construction however, it is also recommended that feasibility studies for these two logistics centers be conducted.

**Access Improvement**

- Due to the current inconvenient railway access from Alexandria to the 6th of October industrial zone, the JICA Study Team recommends the construction of a direct access line, which diverges at around Barkash or Manashy stations, directly to the 6th of October industrial zone and connecting to the Oasis line.

  Construction of a river port would also contribute to attract cost- and punctuality-sensitive freight rather than speed-sensitive freight. This new river port should be located near the industrial zone.

- The 10th of Ramadan industrial zone is not connected with any railway services inspite of the railway line running near the industrial zone. Construction of the direct access line from Bilbeis to the 10th of Ramadan industrial zone is thus recommended to promote railway freight transportation between this industrial area and Damietta Port/ Port Said Port (West and East).

  The construction of a new river port around Bilbeis would also improve access by inland waterway from Damietta Port to this industrial zone. However, intermodal transhipment is necessary and the transport distance of each mode might be rather shorter than the economic distance, so a careful examination of the viability of the new river port should be conducted.

**Acquisition of Sufficient area**

The size of the logistics center is dependent of the volume of containers. However, average figures range from 100-150 ha to 400-500 ha since it requires space for a management office, customs clearance facilities, train handling space, container freight station, truck terminal, warehouses, vehicle repair facilities, and so on. The minimum area of 100 ha is equivalent to about six to eight times as wide as the existing two dry ports in the 6th of October industrial zone, and four times that in the 10th of Ramadan.

**Facilitation of Sufficient Equipment**

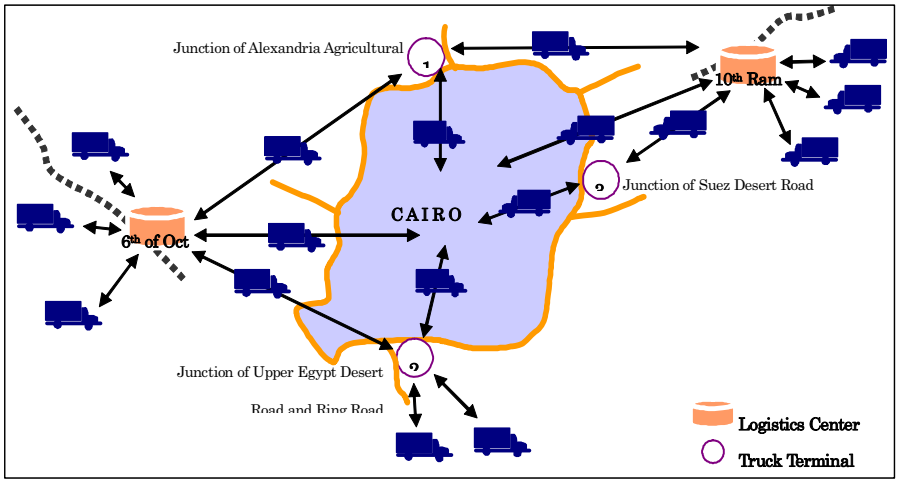
- Sufficient numbers of loading/unloading equipment should be provided for both railway and truck containers by the management company of the logistics center, and offered at a reasonable price to attract more freight containers.
- The logistics center is required to facilitate utilization of EDI system and replace all hand-written documents with digital ones to simplify and speed up the registration as well as for quick communication and equipment arrangement. It is recommended that the Customs Authority ensure that this is an integral part of the logistics center.

**Relation with Existing Dry Ports**

It is suggested that the two existing dry port companies merge into one, and become part of the new logistics center management company. By doing this, all the equipments can be utilized without additional investment.

## Relationship with Existing Truck Terminal Plan

Truck terminals as recommended in the CREATS Study can function in a mutually complementary manner as shown in Figure 4.9. Truck terminals mainly deal with domestic freight while the logistics center handles export/import freight.




Source: JICA Study Team

**Figure 4.9 Relationship of Logistics Centers and Truck Terminals**

## Action Plans

The processes for project implementation are as follows:

- Preparation of the total concept for the logistics center business by the government
- Necessary legal arrangement by the government
- Establishment of the business entity i.e. company
  Core entities should be existing dry port companies, ENR or private railway freight companies regardless of nationality. Other private investors are welcome.
- Selection of the new site/land
- Social and environmental impact study
- Land acquisition
- Selling the land of the existing dry ports
- Construction of the direct railway access line
- Construction of the logistics center and installation of equipment

## Government Roles

The government is expected to intervene in various fields. These will be discussed in Section 4.9.

## Other Logistics Center

For many factories located in the industrial zones, they prefer keeping their imported materials at the public logistics center and receiving delivery of appropriate volumes when required by the factory. In this way, stock management costs are reduced as well as the financial burden attributable to the logistics activities by themselves.

**Port Said Port (East) Logistics Center:**

The necessity of the logistics center at Port Said Port (East) is dependent on the progress of the industrial zone development adjacent to this port site. It is now on planning stage and, at present, there are still no factories.

The most advantageous timing for construction of the logistics center is anticipated to be after the 3rd or 4th stage of the port development plans, when the active economic linkage between industrial zones around Cairo and Port Said Port (East) industrial zone has been established. The progress of industrial development should therefore be carefully monitored.

The concept is that the logistics center should be in the port site or any bonded area near the port so that it would attract more factories into the industrial zone behind the port earlier than anticipated. It is expected, though, that a logistics center company might suffer some financial deficiency during the initial stages.

## 2) DRY PORT DEVELOPMENT

### Aims

To allocate the appropriate number of dry ports around the country, and enhance the operational performance of each dry port. The aim is to optimize the resource allocation of existing and future dry ports.

### Solutions

The following criteria have been applied for assessing the dry port construction plan.

**(1) One dry port in one industrial area**
Ideally, each industrial zone should have a dry port even though there is another one in a neighbouring industrial zone. There is even an industrial zone that has two dry ports. In an area, one big dry port is more convenient than many smaller ones that cannot be utilized to the full extent of their capacities.

It is recommended therefore that duplicated dry ports be phased out or merged into one bigger dry port. Some can be suggested to cease operation if the scale of industrial zone is too small.

**(2) Establishment of dry port necessary for two governorates: Beni-Suef and Aswan**
The container volumes for future export/import at each governorate were estimated. These indicated governorates where a study for new dry port is necessary. As a result, it was concluded that establishment of dry ports at Beni-Suef and Aswan governorates is required. Moreover, the number and type of commodities should also be assessed in detail.

**(3) Conversion into logistics centers**
Some dry ports should be converted into more comprehensive logistics facilities where various value-added activities can be provided. The criteria are the need to have both a distribution center and a dry port in one place. This is necessary for current dry ports in the 6$^{th}$ of October and 10$^{th}$ of Ramadan industrial zones.

# 4.6 ENHANCEMENT OF FORWARDING INDUSTRY DEVELOPMENT

## Aims

To enhance the capability of the forwarding industry to perform all the forwarding activities efficiently, and to attract more users from the manufacturing industry for export/import.

## Solutions

**(1) Facilities**

The limited service range of the forwarding industry is attributable to lack of **information and communication technology (ICT) systems**, especially the lack of connectivity with a nation-wide EDI system. In order to promote the introduction of EDI, other IT equipment and computer software such as web-EDI, the JICA Study Team suggests the provision of a subsidy for the forwarding companies to adopt such IT systems. In Egypt, this is a more suitable incentive or financial support than tax exemption or reduction.

Implementation of **a Radio Frequency Identification (RFID) pilot project for cargo traceability and security** is also suggested to widen the service range of the forwarding industry. Without this kind of freight tracing system, forwarding companies cannot be competitive in the international market.

**Handling equipment should be regulated** by a policy that should be provided by the logistics center/dry port. This treatment should aim at reducing the financial burden on small and medium companies of the logistics industry. With this arrangement and an EDI system, the construction of a logistics center can achieve more efficient operations.

Furthermore, forwarding companies are inclined to utilize old trucks aged more than 20–30 years, and their operation results in serious environmental degradation and freight damage. So there should be a policy guideline to call for the replacement of these old trucks. This can be implemented by adopting **an official licensing system for forwarding companies**.

**(2) Financial incentive**

It is anticipated that many companies will face financial difficulty in purchasing the equipments and systems for the development of their facilities. Since many forwarding companies are small- and medium-enterprises, it is suggested that the government provide subsidies to support their purchase of the required IT equipment and software. This should be closely related to existing financial arrangements of the government so that details of this assistance will be left to the government and the authority concerned. The JICA Study Team recommends a financial incentive program by the government.

**(3) Human resources**

Inspite of the great efforts of various education and training institutes, the availability of training for staff of the forwarding industry is still limited. This is partly due to the fact that no system has been established to impose on forwarding companies to train their staff by enrolling them in seminars and training courses. Also, there is no specific incentive to encourage forwarding companies to invest in training.

It is suggested that some important seminars/trainings should be a pre-condition for business approval and licence of the forwarding companies, under the jurisdiction and

supervision of the Ministry of Transport and/or its institute. The seminars/trainings should cover the laws and regulations on forwarding activities, training in EDI or web-EDI operation, traffic regulations, the latest technology and so on. These policy suggestions are the most effective for enhancing the knowledge and operation skills of the forwarding industry.

**Table 4.2 Qualifications for Forwarding Industry Staff: Japan's Case**

| Title of Qualification | Purpose | Responsible Authority | Application Procedure |
|---|---|---|---|
| International Logistics Master | Be certified semi-formally as a highly capable logistics manager | Authorized by highly accredited private association | Lectures and examination (once a year) |
| Registered Customs Specialist | Can be attorney of Customs Officer | Authorized by the Government | Examination (once a year) |

# 4.7 LEGAL AND INSTITUTIONAL ARRANGEMENT

## Aims

To establish a national logistics policy and create an environment where the implementation of necessary logistics policies can be done smoothly, and to align all the efforts for recommended projects and programs.

## Solutions

**(1) Formulation of a national logistics policy and continuous updating**

At present, no comprehensive national policy on logistics development has been authorized. Once established, such policy would require continuous updating work to reflect shifts in emphasis or urgency of the national development policy as well as traffic/economic conditions. It is recommended to establish a consultation forum composed of representatives from government, private sector (forwarding industry) and the universities to reflect the opinions and needs of major stakeholders. In many countries, an **international logistics competitiveness study group** is set up to take responsibility for the tasks of developing and updating a national policy on logistics.

The new task of policy coordination between various ministries should come under the Ministry of Transport, as the ministry responsible for logistics development.

**(2) Legal arrangement**

No regulations on freight forwarders have been established yet, resulting in logistics services that are rather inferior to international standards. The regulations required cover a wide range such as business licence, essential qualification of staff and equipment (completion of authorized seminars, EDI connectivity and authorized qualification in logistics business, etc.), authorization and supervision of logistics seminars/training, subsidy provision to promote an EDI system and equipment, and so on.

Enforcement of seminar/training participation by law is also suggested to further improve the service level of the logistics industry as a whole.

Laws and regulations are also necessary for the newly proposed logistics centers and dry port licences.

**(3) Institutional arrangement**

The Transport Planning Authority, Ministry of Transport is now the most appropriate government organization to take charge of the logistics development plan. However, it does not have a department or any trained staff specialized in the logistics planning. Thus, it is suggested that there should be a new department formed to specialize in logistics development planning. A new committee is also suggested to be set up for the specific purpose of preparing the construction plans for the logistics center. The committee can be administered by the TPA and should consist of all the government organizations and private sector concerned.

With plenty of pooled experience, this new committee and the department within the TPA would, in the future, be the core of the new independent logistics planning institute. This is considered the most realistic arrangement since logistics policy development involves many ministries and the new organization would be responsible for policy coordination among them as well as for the proper execution of the policy.

**(4) Enhancement of policy-making capability**

Logistics and/or its development policy is a new concept for the government, and the individual policy makers and supporting staff have not yet had any overall planning experiences in logistics. Therefore, opportunities should be offered to the policy makers and supporting staff to absorb the latest situation of logistics planning and its actual application in foreign countries. **Observation-cum-study tours** are suggested both for the policy makers and for the support staff. As the proverb says, seeing is believing and actual observation is the most efficient and quickest way of getting acquainted with new knowledge. Training of policy makers and government staff are suggested to be part of the administrative capability enhancement program.

**Professional advisors,** experienced with official development aid from various donor countries, can be invited for short or medium periods in the initial planning stages. Initially, it is suggested that a dry port specialist be invited.

# 4.8 HUMAN RESOURCE DEVELOPMENT: MORE TRAINING OPPORTUNITY

## Aims

- To acquaint the government staff with the latest knowledge of logistics to facilitate the current logistics planning by the government, and to enhance the capability of public administration staff;
- To enhance the capability of forwarding companies and their staff in both management and operations;
- To increase well-trained and efficient workers, and to raise the service levels of the logistics industry in general; and
- To support staff of the manufacturing industry to become sufficiently competitive in the international market.

## Solutions

In establishing a policy framework and enacting the necessary law, government staff will have to become better informed about current policy planning techniques and policy instruments in use for logistics development. This enriching and deepening of logistics knowledge is required both for policy makers and supporting staff. **Inspection tours** to countries with advanced logistics systems would be the most effective way to accomplish this purpose in a short time. **Inviting logistics specialists** to work in the offices together with government staff would be an alternative supplemental measure. An approach should be made to logistics advanced countries for support in these areas.

Operators and workers should be provided with opportunities to attend various training programs and seminars.

**A government-authorized qualification** should be a legal requirement for a business permit, and **the training and seminar program could be a pre-requisite** for the qualification. In this way, an incentive would be given to the trainees.

As a result, the human resources element in logistics activities can be enhanced. Since the Egyptian forwarding industry is composed of small and medium companies, these compulsory measures are necessary to raise the level of human resources and to guarantee the quality of service as a whole.

In summary, it is suggested that enforcement measures and incentives be applied to encourage the private sector to take part in the capacity enhancement program, with some financial support from the government. **Some seminars and training can be pre-conditions for a company's entry into the logistics business** to secure the minimum level of services. Those seminars should be well integrated with current trends in logistics management know-how, current regulations, logistics facilities at seaports/logistics centers/dry ports, knowledge on how to use them, traffic law, and so on. Introduction of a new national qualification system would be useful to facilitate this kind of human resource enhancement. A subsidy system has been suggested to support the implementation and to ensure satisfactory results.

# 4.9 PROMOTION POLICY FOR LOGISTICS CENTER

## Aims

Supporting policies are aimed at making the newly proposed logistics center (including customs office) practical and acceptable for users, and also aims to transform current freight flows to be more smooth and efficient. For this purpose, better facilities and services are necessary. Government support can play an important role and be most effective in translating this plan into reality.

## Solutions

**(1) Promotion policies for logistics center services**

Necessary policies are listed, where the government can contribute to.

- Supports for facility improvement of logistics center
  - ✓ Support for determining the users' preference: Feasibility study is necessary to undertake selection of the most convenient location, necessary services/equipment/facilities they want to use, transportation connectivity/ network, the freight volume and commodity to be handled, and so on.
  - ✓ Support for establishing the project framework: A committee is necessary, which consists of representatives of all major organizations concerned such as the ministries, government agencies, forwarding industry/truck transport service companies, and user companies (including manufacturing companies, wholesale companies, etc.). This committee can be managed by the TPA..
  - ✓ Project framework covers the final selection of site, land acquisition process and its funding method, other government support measures, an advertisement for companies to invest on the logistics center company and user companies, selection of project type and capital formation scheme (including Build-Operate-Transfer, or Public-Private Partnership), preparation of necessary legislations, and so on. Related infrastructure development should also be studied by this committee as well as other related policy coordination.
  - ✓ Support for logistics center management: A tax exemption/reduction measure is suggested at the initial stage of the project operation.
  - ✓ Support for facility improvement of customs office within the logistics center: Special attention should be paid to solve the facility and service gaps from those in the sea ports.
  - ✓ Support for accessibility improvement to/from the logistics center
    - Access road development in the short term
    - Access railway lines construction to the logistics center in the short-or medium-term
    - New river port construction over the long term.

**(2) Promotion policy for line-haul/delivery truck services, and for the forwarding industry**

Introduction of a new business registration system is suggested for vehicles/companies that use the logistics center, and engage in line-haul truck services and pick-up/delivery services. Qualification criteria can be i) age of vehicle and the maintenance conditions of the vehicle, and ii) participation to various seminars/trainings organized under the supervision of the Ministry of Transport.

**(3) Well-coordinated implementation program of promotion policies**
Policies implementation should be well coordinated. Particularly, synchronized implementation of the policies listed in (1) and (2) above would be most appropriate.

In addition, the followings are suggested:
- Strengthening of a crackdown on over-loading of freight vehicles,
- Tightening enforcement of automobile emissions control,
- Increasing the toll rate for trucks and other freight vehicles, and
- Construction of railway stations in the logistics centers with container yards, and/or new river ports close to logistics centers.

# 4.10 SOCIAL AND ENVIRONMENTAL CONSIDERATIONS

All the projects proposed are subject to environmental impact assessment and need to follow the procedures of Law No. 4.

Egyptian Law No. 4 states that the environmental impact of certain establishments or projects must be evaluated before any construction works are initiated or a licence is issued by the competent administrative authority or licensing authority.

Law No. 4 refers to four (4) principles for evaluating the establishments or projects, and they are:

- Type of activity performed by the establishment
- Extent of natural resources exploitation
- Location of the establishment
- Type of energy used to operate the establishment

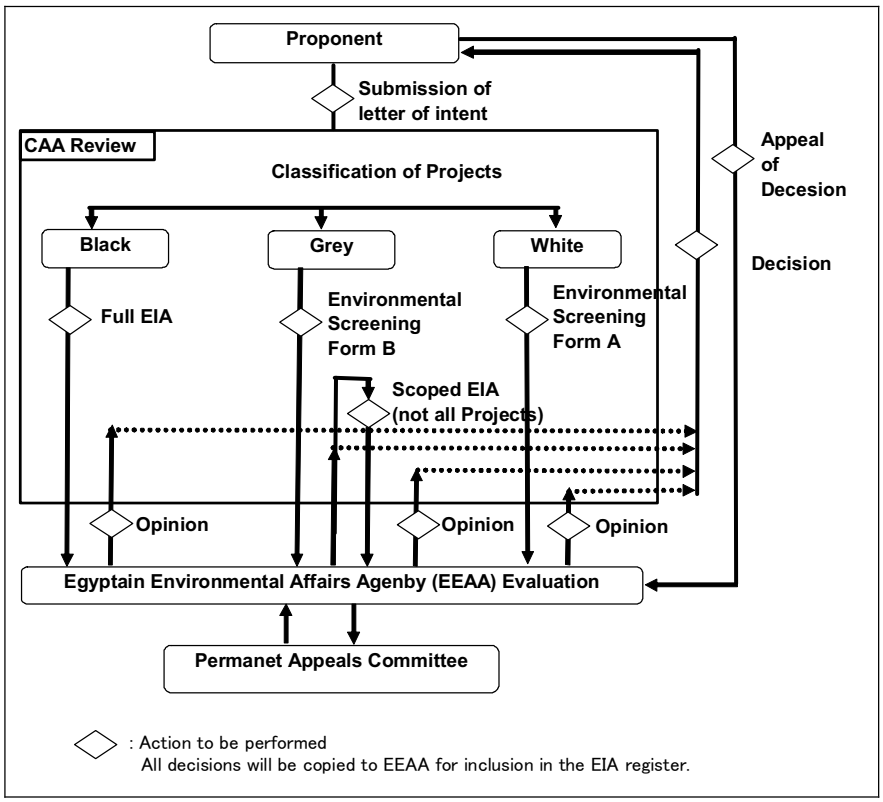
All the projects can be classified into three groups, and each listed project would proceed as indicated in Figure 4.10.

- White list projects with minor environmental impact.

- Grey list projects that may result in substantial environmental impact.
  The proponent has to fill out the Environmental Screening Form "B". The procedure consists of two stages: (1) screening (filling out form B) possibly followed by (2) a scoped Environmental Impact Assessment on certain identified impacts/processes.

  ✓ Mass transit systems and expressways 50 km or less in length
  ✓ The expansion or modification of an existing road that would lengthen or widen such road by more than 15%
  ✓ Railway lines 50 km or less in length
  ✓ Steel shipyards, dry docks, floating docks and ship maintenance

- Black list projects that require complete Environmental Impact Assessment.
  ✓ Mass transit systems and expressways (more than 50 km in length)
  ✓ New railway lines more than 50 km long




Source: Guideline for Egyptian Environmental Impact Assessment, Egyptian Environmental Affairs Agency (EEAA), Environmental Management Sector

**Figure 4.10 EIA System and Application Processing Flow**

Global environmental issues have recently been focus of attention in the whole world, particularly in terms of $CO_2$ emission which causes global warming. In this connection, the JICA Study Team estimated the decrease in $CO_2$ emission through the modal shift of freight transportation from truck to railway within the limit of the existing railway capacity.

In 2022, the railway freight transportation is estimated to be at almost full capacity, with 6% of the total freight transportation by truck shifted to railway.

The daily $CO_2$ emission by this modal shift is calculated at 2.7 million US$/year taking into account the unit rate on emission trading scheme of 5US$/$CO_2$1000kg.

Strengthening of the railway corridors, therefore, would contribute a bigger decrease in $CO_2$ emission. It is thus recommended to encourage a significant change in the share between truck and railway freight transportation in the view of this global environmental benefit.

# 5. RECOMMENDED PROJECTS AND IMPLEMENTATION SCHEDULE

**Project List**

The JICA Study Team has prepared the recommended projects for logistics development up to 2022 from three (3) strategic points of view: infrastructure development (hardware aspect), development of supporting measures for SCM (software aspect), and human resource development, which include nine (9) strategies discussed in Section 2.2.

Figure 5.1 shows the project selection, and the list includes "**Ongoing/Committed Projects**" (Table 5.1, Figures 5.2 and 5.3), "**Planned Projects**" proposed by governmental agencies, and **the projects/studies suggested by the JICA Study Team**. The last two are scheduled in three stages: short term (2007/08-2011/12), medium term (2012/13-2016/17), and long term up to the target year of 2022 (2017/18-2021/22) (Table 5.2, Figures 5.4 and 5.5).

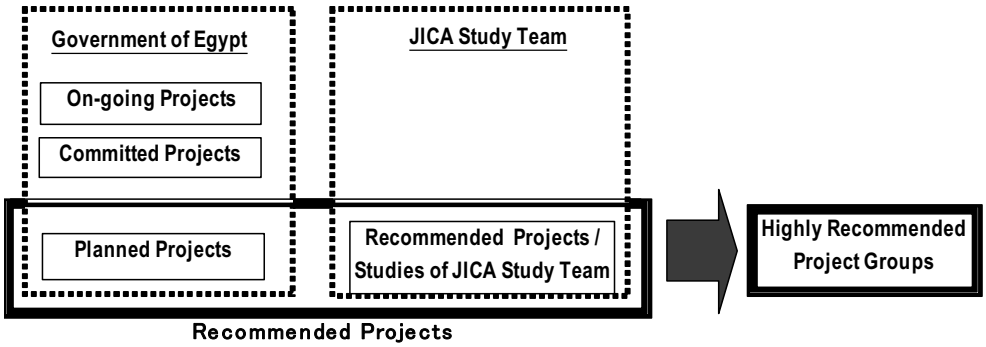



**Figure 5.1 Process of Project Selection**

**Prioritization**

In determining priority order of the Projects, the following criteria are applied:

- High contribution to corridor development
- High contribution to just-in-time delivery
- High contribution to containerization
- High demand of freight transportation for export/import
- High contribution to export promotion
- Projects that have high potential for public-private-partnership
- High maturity of project

In addition to those items above, natural and social environmental concerns are also taken into consideration. They are:

- Projects that have less impact on the natural environment
- Projects with no or few resettlement issues

**Recommended Projects**

The planned/recommended projects and their respective implementation schedules are shown in Table 5.2, Figures 5.4 and 5.5, which are packaged by sector. For effective implementation, some individual recommended projects listed in Table 5.2 are grouped together into more comprehensive large projects, covering more than two sectors. The groups are given new project names. Within this framework of grouping or project combination, individual projects can complement one another to fulfil the optimum project potential to the greatest extent. These are the **highly recommended project groups** among many individual projects.

## Table 5.1 Ongoing/Committed Projects (1/2)

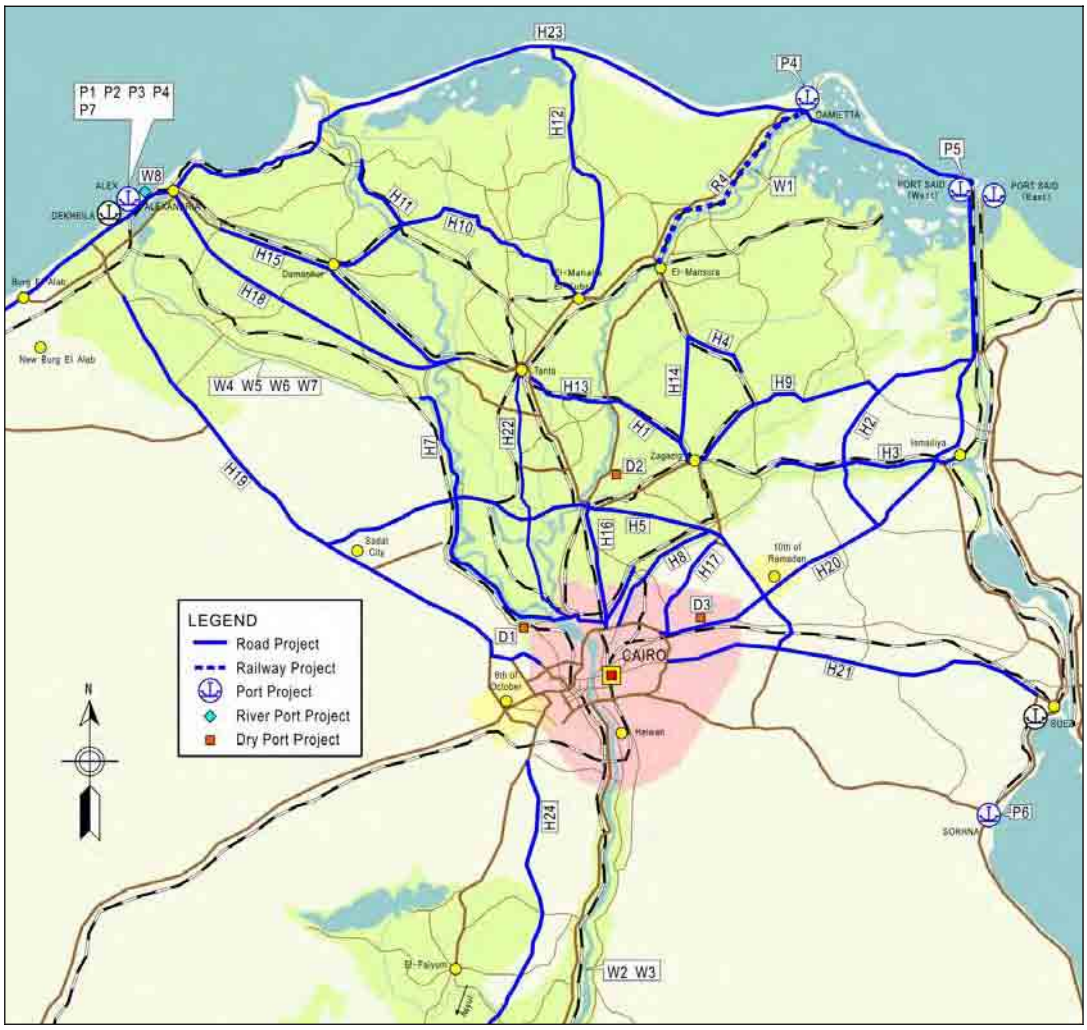
| Project No. | Project Name | Status | Implementing Agency | Project Cost (million LE) | Fund Source |
|---|---|---|---|---|---|
| I. Sea Port | | | | | |
| P1 | Warehouses Upgrading Project at Alexandria Port | Ongoing | Alexandria Port Authority | 20 | GOE |
| P2 | Flyover Construction Project at Dekheila Port (from Development Road) | Ongoing | Alexandria Port Authority | 300 | GOE |
| P3 | Container Yard Construction Project at AICT Alexandria | Ongoing | AICT | 30 | PPP |
| P4 | Container Yard Rehabilitation Project at Damietta Port | Ongoing | Damietta Container Handling Company | 30 | GOE |
| P5 | Container Yard Expansion Project at Port Said Port (West) | Ongoing | Port Said Port Authority | 200 | PPP |
| P6 | Basin 3 Terminal Construction Project at Sokhna Port | Ongoing | Sokhna Port Development Company | 420 | PPP |
| P7 | Radar Tower Building Construction Project at Alexandria Port | Committed | Alexandria Port Authority | 50 | GOE |
| II. Road | | | | | |
| H1 | Zagazig – Met Gamr Improvement Project | Ongoing | GARBLT | 50 | GOE |
| H2 | El Kasasen – El Salihya Improvement Project | Ongoing | GARBLT | 100 | GOE |
| H3 | Ismailia – El Kasasen – Abasa Improvement Project | Ongoing | GARBLT | 120 | GOE |
| H4 | El Senbellawen – Kafr Sakr Improvement Project | Ongoing | GARBLT | 120 | GOE |
| H5 | Regional Ring Road Development Project | Ongoing | GARBLT | 1,500 | GOE |
| H6 | Baris – Darb El Abryen Construction Project | Ongoing | GARBLT | 120 | GOE |
| H7 | Kanater – Khatatba – Tawfikya Improvement Project | Committed | GARBLT | 250 | GOE |
| H8 | Cairo - Belbis Agriculture Road Improvement Project | Committed | GARBLT | 60 | GOE |
| H9 | Kantara – El Salihya – Fakos – Abu Kber – Zagazig Improvement Project | Committed | GARBLT | 350 | GOE |
| H10 | Talkha – Samanod – El Mahala – Kafr El Sheik – Desok – Damanhur Improvement Project | Committed | GARBLT | 460 | GOE |
| H11 | Desok – Fooh – Metobas Improvement Project | Committed | GARBLT | 200 | GOE |
| H12 | El Mahala – Baltiem Improvement Project | Committed | GARBLT | 160 | GOE |
| H13 | Zefta – Tanta Improvement Project | Committed | GARBLT | 50 | GOE |
| H14 | Zagazig – El Senbellawen Improvement Project | Committed | GARBLT | 150 | GOE |
| H15 | Kafr El Dawar – Kafr El Zayat Improvement Project | Committed | GARBLT | 150 | GOE |
| H16 | Shubra – Banha Expressway Development Project | Committed | GARBLT | 710 | GOE |
| H17 | Cairo – Zagazig Expressway Development Project | Committed | GARBLT | 350 | GOE |
| H18 | Kafr El Zayat – Hosh Essa – Alexandria Expressway Development Project | Committed | GARBLT | 800 | GOE |
| H19 | Cairo - Alexandria Desert Road Upgrade Project | Committed | PPP | 800 | GOE |
| H20 | Cairo - Ismailia - Port Said Road Upgrade Project | Committed | PPP | 800 | GOE |
| H21 | Cairo - Suez Road Upgrade Project | Committed | GARBLT | 500 | GOE |
| H22 | Kanater - Bagour - Shben El Kom - Tanta - El Mahala Section Upgrade Project | Committed | GARBLT | 660 | GOE |
| H23 | International Coastal Road Upgrade Project | Committed | GARBLT | 1,950 | GOE |
| H24 | Cairo - Asyut Desert Road Improvement Project | Committed | GARBLT | 360 | GOE |
| H25 | Beni Suef - Menya - Asyut - Suhag Agricultural Road Improvement Project | Committed | GARBLT | 600 | GOE |
| H26 | Qena - Safaga Improvement Project | Committed | GARBLT | 240 | GOE |
| H27 | Toshka - Arken Road Construction Project | Committed | GARBLT | 100 | GOE |

Note: Fund Source: GOE is Government of Egypt
Source: JICA Study Team based on data from various authorities

## Table 5.1 Ongoing/Committed Projects (2/2)

| Project No. | Project Name | Status | Implementing Agency | Project Cost (million LE) | Fund Source |
|---|---|---|---|---|---|
| III. Railway | | | | | |
| R1 | 120 Locomotives Rehabilitation Project | Ongoing | ENR | 396 | GOE |
| R2 | 120 Locomotives Installation Project | Ongoing | ENR | 2,640 | GOE, Qatar & Libya |
| R3 | 300 Vehicles Upgrading Project | Ongoing | ENR (Semaf Factory) | 60 | GOE |
| R4 | Modernization Project for Signalling of Some Lines (Damietta – Mansura Line) | Ongoing | ENR | 60 | GOE |
| R5 | Modernization Project for Signalling of Some Lines (Beni Suef – El Minia – Aswan Line) | Ongoing | ENR | 1,700 | GOE |
| IV. Inland Waterway Transport | | | | | |
| W1 | Cairo - Damietta Waterway Development Project | Ongoing | River Transport Authority | 260 | GOE |
| W2 | Cairo - Aswan Waterway Dredging Project | Ongoing | River Transport Authority | 128 | GOE |
| W3 | Cairo - Aswan Waterway Navigation Development Project (Phase I) | Ongoing | River Transport Authority | 67 | GOE |
| W4 | El Maleh Lock Construction Project | Ongoing | River Transport Authority | 90 | GOE |
| W5 | Km 100 Lock Construction Project | On-going | River Transport Authority | 322 | GOE |
| W6 | Bolin Lock Upgrading Project | Ongoing | River Transport Authority | 2 | GOE |
| W7 | Km 61 Lock Construction Project | Ongoing | River Transport Authority | 6 | GOE |
| W8 | River Port Development Project at Alexandria Port | Ongoing | Alexandria Port Authority | 30 | GOE |
| V. Dry Port | | | | | |
| D1 | Bashtel Dry Port Development Project | Ongoing | Inland and Dry Ports Authority | 25 | PPP |
| D2 | Sakr Dry Port Development Project | Ongoing | Inland and Dry Ports Authority | 50 | GOE |
| D3 | El Obour Dry Port Development Project | Ongoing | Inland and Dry Ports Authority | 68 | Private |

Note: Fund Source: GOE is Government of Egypt
Source: JICA Study Team based on data from various authorities




Source: JICA Study Team based on data from various authorities

**Figure 5.2 Location Map of Ongoing/Committed Projects in Nile Delta**


Source: JICA Study Team based on data from various authorities

**Figure 5.3 Location Map of Ongoing/Committed Projects in Upper Egypt**

## Table 5.2 Recommended Projects and Implementation Schedule (1/2)

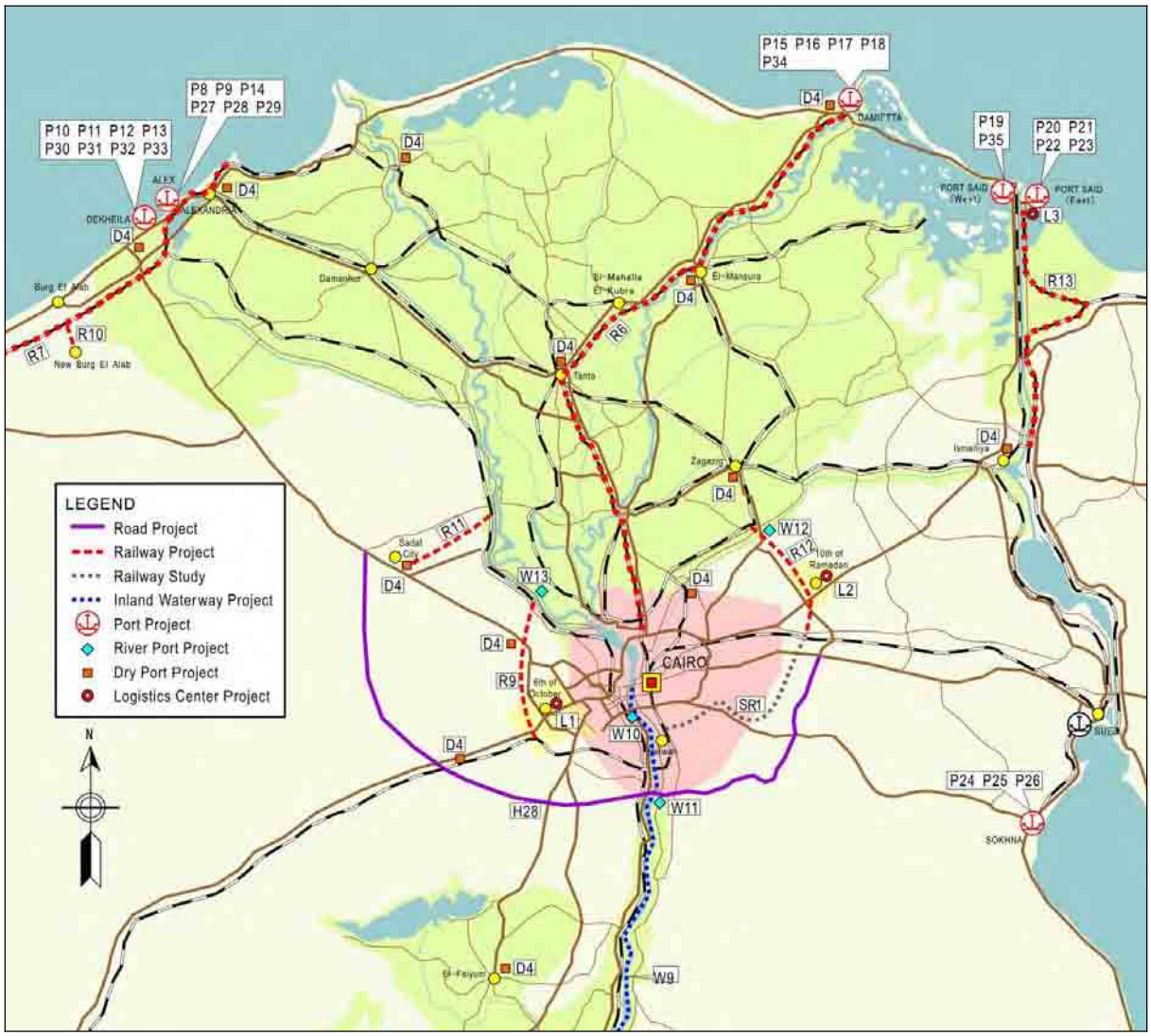
| Corridor | Package | Project No. | Project/Program/Study | Short Term | Medium Term | Long Term | Project Cost (million LE) | Implementation Agency |
|---|---|---|---|---|---|---|---|---|
| 1. Alexandria - Cairo / 6th of October Corridor | Package I. Development of Port Facilities for Container | P9 | Multipurpose Terminal Development Project at Alexandria Port | | ■ | | 2,000 | Alexandria Port Authority |
| | | P10 | International Container Terminal Development Project at Dekheila Port | | ■ | | 470 | Alexandria Port Authority |
| | | P27 | Container Yard Expansion Project at Alexandria Port (AICT) | | | ■ | 15 | Alexandria Port Authority |
| | | P28 | Gantry Cranes Renewal and Additional RTG Installation Project at Alexandria Port (Government) | | ■ | | 25 | Alexandria Port Authority |
| | | P29 | Container Yard Pavement Upgrade Project at Alexandria Port (Government) | | ■ | | 125 | Alexandria Port Authority |
| | | P30 | Container Terminal Consolidation and Handling Efficiency Improvement Project at Dekheila Port | | ■ | | 10 | Alexandria Port Authority |
| | | P31 | Additional Container Yard Construction Project at Dekheila Port | | | ■ | 25 | Alexandria Port Authority |
| | Package II. Development of Port Facilities for Bulk & General Cargoes | P11 | Petrochemical Berth Construction Project at Dekheila Port | | ■ | | 120 | Alexandria Port Authority |
| | | P12 | Grain Berth Extension Project at Dekheila Port | | ■ | | 120 | Alexandria Port Authority |
| | | P13 | Billet, Coal & Coke and Dry Bulk Berth Development Project at Dekheila Port | | ■ | | 120 | Alexandria Port Authority |
| | | P33 | Conveyor System Installation Project at Dekheila Port | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ | 175 | Alexandria Port Container & Cargo Handling Co. |
| | Package III. Development of Port-related Infrastructure | P8 | Railway Yard Development Project at Alexandria Port | ■ | | | 4 | Alexandria Port Authority |
| | | P14 | Middle Port Development Project between Alexandria and Dekheila Ports | | | ■ | 12,000 | Alexandria Port Authority |
| | | P32 | Additional Breakwater Construction Project at Dekheila Port | | ■ | | 250 | Alexandria Port Authority |
| | Package IV. Enhancement of Multimodal Transport | R9 | 6th of October Direct Access Line Construction Project | | ■ | | 240 | ENR |
| | | R11 | Sadat City Access Line Construction Project | | ■ | | 190 | ENR |
| | | W13 | New River Port Construction Project near 6th of October | | | ■ | 60 | River Transport Authority |
| | | L1 | Logistics Center Development Project (6th of October) | ■ | | | 80 | Inland and Dry Ports Authority |
| | | | | | | Total | 16,029 | |
| 2. Damietta - Cairo / 10th of Ramadan Corridor | Package I. Development of Port Facilities for Container | P15 | KGL Container Terminal Construction Project (Phase-1) | ■ | | | 560 | KGL (private company) |
| | | P16 | KGL Container Terminal Construction Project (Phase-2) | | ■ ■ ■ | ■ ■ ■ | 660 | KGL (private company) |
| | | P17 | Access Channel Deepening Project at Damietta Port | ■ | | | 132 | KGL (private company) |
| | | P18 | Berth Conversion Project from General Cargo Berth to Container Berth at Damietta Port | | | ■ | 30 | Damietta Port Authority / Damietta Container Handling Company |
| | Package II. Upgrade of Access Channel | P34 | Access Channel Upgrade Project at Damietta Port | | ■ | | 1,200 | Damietta Port Authority |
| | | SP2 | Study of Numerical Simulation for Sedimentation Prevention at Damietta Port | ■ | | | 10 | Damietta Port Authority |
| | Package III. Enhancement of Multimodal Transport | R6 | Electrification of Signaling of Beni Shebin El-Qanater - El-Zagazig - El-Mansura - Damietta Line | ■ | | | 734 | ENR |
| | | R12 | 10th of Ramadan Direct Access Line Construction Project (Bilbeis - 10th of Ramadan) | | ■ | | 250 | ENR |
| | | W12 | Bilbeis River Port Development Project | | | ■ | 60 | River Transport Authority |
| | | L2 | Logistics Center Development Project (10th of Ramadan) | ■ | | | 80 | Inland and Dry Ports Authority |
| | | | | | | Total | 3,716 | |
| 3 & 4. Port Said Port (West & East) - Cairo / 10th of Ramadan Corridor | Package I. Improvement of Port Said Port West | P19 | Deep Berth Construction (400m) Project at Port Said Port (West) | ■ | | | 400 | Port Said Port Authority |
| | | P35 | Container Yard Expansion Project at Port Said Port (West) | | ■ | | 250 | Port Said Port Authority |
| | Package II. Improvement of Port Said Port East | P20 | Container Terminal Development Project at Port Said Port (East) (Phase-2) | ■ | | | 2,500 | Port Said Port Authority |
| | | P21 | Container Terminal Development Project at Port Said Port (East) (Phase-3) | | ■ | | 2,500 | Port Said Port Authority |
| | | P22 | Container Terminal Development Project at Port Said Port (East) (Phase-4) | | | ■ | 2,500 | Port Said Port Authority |
| | | P23 | Container Terminal Development Project at Port Said Port (East) (Phase-5) | | | ■ | 2,500 | Port Said Port Authority |
| | | SP3 | Master Plan Supplemental Study at Port Said Port (East) | ■ | | | 10 | Port Said Port Authority |
| | | SP4 | Study on Bunkering Service Station at Port Said Port (East) | ■ | | | 10 | Port Said Port Authority |
| | Package III. Facilitation of Logistics Function | R13 | Railway Improvement Project (Ferdan - Port Said Port East) | | ■ | | 900 | ENR |
| | | L3 | Logistics Center Development Project (Port Said East) | ■ | | | 80 | Inland and Dry Ports Authority |
| | | | | | | Total | 11,650 | |

Note: ■ ■ ■ ■: The implementation schedule will depend on private company's intention.
Source: JICA Study Team

## Table 5.2 Recommended Projects and Implementation Schedule (2/2)

| Corridor | Package | Project No. | Project/Program/Study | Short Term | Medium Term | Long Term | Project Cost (million LE) | Implementing Agency |
|---|---|---|---|---|---|---|---|---|
| 5. Sokhna Port - Cairo/10th of Ramadan /6th of October Corridor | Package I. Development of Sokhna Port | P24 | Container Terminal Development Project at Sokhna Port | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ | - | Sokhna Port Development Company |
| | | P25 | General Cargo Terminal Development Project at Sokhna Port | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ | - | Sokhna Port Development Company |
| | | P26 | Bulk Terminal Development Project at Sokhna Port | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ | - | Sokhna Port Development Company |
| | | | | | | Total | - | |
| 6. Upper Egypt - Red Sea Corridor | Package I. Promotion of Containerization | P36 | Safaga Multipurpose Terminal Development Project | | ▬ | | 100 | Red Sea Port Authority |
| | | R14 | Reefer Container and Facility Project | | ▬ | | 10 | ENR |
| | | | | | | Total | 110 | |
| 7. Upper Egypt - Cairo Corridor | Package I. Enhancement of Multimodal Transport | R8 | Electrification of Signaling for Beni Suef - El-Menia - Asyut Line | | ▬ | | 1,640 | ENR |
| | | W9 | Cairo - Aswan Waterway Navigation Development Project (Phase II) | | | ▬ | 33 | River Transport Authority |
| | | W10 | Athar El Nabi River Port Development Project | | | ▬ | 38 | River Transport Authority |
| | | W11 | El-Tebin River Port Development Project | | ▬ | | 60 | River Transport Authority |
| | | SF7 | Industrial Zone Access Road Construction Study | | ▬ | | 5 | MOT |
| | | SF8 | Feasibility Study on the Nile River Freight Transportation | ▬ | | | 10 | MOT |
| | | | | | | Total | 1,786 | |
| 8. Other | Package I. Strengthening of Transport Network | H28 | Regional Ring Road Development Project (South Arc) | | ▬ | | 1,500 | GARBLT |
| | | R7 | Electrification of Signaling for El-Rahm - Alexandria - Abu Qeer Line | | ▬ | | 1,116 | ENR |
| | | R10 | Burg El-Arab Access Line Construction Project | | ▬ | | 750 | ENR |
| | Package II. Development of Dry Port | D4 | Dry Port Development Project (17 location) | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ | 720 | Inland and Dry Ports Authority |
| | Package III. Improvement of Customs Procedure | C1 | Single Window System Establishment Supplemental Project (Sea Ports) | ▬ | | | 50 | Port Authorities |
| | | C2 | Single Window System Establishment Project (Dry Ports) | | ▬ | | 10 | Inland and Dry Ports Authority |
| | | F1 | Pilot Project on Radio Frequency Identification (RFID) System | ▬ | | | 60 | Port Authorities |
| | | SC1 | Simple and Quick Procedure Program | ▬ | | | 10 | Customs Authority/GOEIC |
| | | SC2 | Public Relation Improvement Program | ▬ | | | 10 | Customs Authority/GOEIC |
| | Package IV. Human Resouce Development | SF1 | Financial Incentive Program | ▬ | | | 5 | MOT/MOF |
| | | SF2 | Forwarding/Trucking Industry Service Enhancement Program | ▬ | | | 5 | MOT |
| | | SF3 | Legal and Public Administration Framework Improvement Program | ▬ | | | 20 | MOT |
| | | SF4 | Policy Maker Training Program | ▬ | | | 2 | MOT |
| | | SF5 | Human Resource Development Program | ▬ | | | 20 | MOT |
| | | SF6 | Technical Training Program | ▬ | | | 2 | MOT |
| | Package V. Study for Logistics Infrastructure | SP1 | Study for Coordination of Development Plans for Egyptian Ports | ▬ | | | 10 | Maritime Transport Sector |
| | | SR1 | New Freight Link Study (10th of Ramadan - Helwan, Marazip Bridge) | | ▬ | | 30 | ENR |
| | | SR2 | Railway Freight Service Private Sector Management Study | ▬ | | | 10 | ENR |
| | | SF9 | Study for Logistics Center Development | ▬ | | | 20 | MOT |
| | | | | | | Total | 4,350 | |

Note: ■ ■ ■ ■: The implementation schedule will depend on private company's intention.
Source: JICA Study Team




Source: JICA Study Team based on data from various authorities

**Figure 5.4 Location Map of Planned/New Projects in Nile Delta**


Source: JICA Study Team based on data from various authorities

**Figure 5.5 Location Map of Planned/New Projects for Upper Egypt**

# 6. CONCLUSIONS AND RECOMMENDATIONS

The JICA Study Team recommends that the following **six highly recommended project groups** be implemented as soon as possible. All have been urgently requested and/or are crucially important for the improvement of logistics efficiency for exports/imports of Egypt.

**(1) Egyptian Port Master Plan Study**

The main component is the study to coordinate the development plans for Egyptian ports, aimed to define the roles of each port and correspondingly formulate the national port development plan. There are two crucial issues: one is the action required to ensure that Egypt retains an international transhipment base i.e. hub port function, and the other is to confirm the feasibility of the Damietta Port development.

The component project is:

- SP1: Study for coordination of development plans for Egyptian ports.

Specials emphasis falls on the two components related to SP1 below:

- SP2: Study of numerical simulation for sedimentation prevention at Damietta Port, and
- P19: Deep berth construction (400m) project at Port Said Port (West)

**(2) Logistics Efficiency Enhancement for West Wing Delta**

The main component is the construction of a "logistics center" in the 6th of October industrial zone, and other supplementary projects that should be implemented in an appropriate timeframe.

The component projects are:

- L1: Logistics center development project (6th of October),
- R9: 6th of October direct access line construction project,
- P8: Railway yard development project at Alexandria Port (included in the 5th Five-year development plan),
- W13: New river port construction project near 6th of October,
- SR2: Railway freight service private sector management study (Alexandria – 48 km station – Upper Egypt), and
- SF9: Study for the Logistics Center Development.

**(3) Logistics Efficiency Enhancement for East Wing Delta**

The aim and components are similar to the "**Logistics Efficiency Enhancement for West Wing Delta",** except that the target area is 10th of Ramadan.

The component projects are:

- L2: Logistics center development Project (10th of Ramadan), and
- R12: 10th of Ramadan direct access line construction Project (Bilbeis – 10th of Ramadan).
- SF9: Study for the Logistics Center Development

**(4) Upper Egypt Logistics Improvement**

This aims at stimulating economic development in the Upper Egypt region, by introducing reefer container services for the transport of agro-products and exporting them from Safaga Port. Another destination for reefer containers is the GCR.

The component projects are:

- R14: Installation of reefer container project,
- IP36: Safaga multi-purpose terminal and facility project, and
- SF8: Feasibility study of the Nile River freight transportation.

**(5) Improvement of Customs Procedures**

This aims at implementing additional improvement measures to further shorten the release time of freight at seaports.

The components are:

- C1: Single window system establishment supplementary project (Seaports),
- C2: Single window system establishment supplementary project (Dry Ports),
- SC1: Simple and quick procedure program,
- SC2: Public relations improvement program, and
- F1: Pilot project on Radio Frequency Identification (RFID) system.

**(6) Human Resource Development**

This aims at enhancing the capacity of human resources in a wide range of fields:

The components are:

- SF1: Financial incentive program,
- SF2: Forwarding/trucking industry service enhancement program,
- SF3: Legal and public administration framework improvement program,
- SF4: Policy maker training program,
- SF5: Human resource development program, and
- SF6: Technical training program.

In implementing any projects/studies suggested in this report, it is suggested that new detail and comprehensive study be conducted in the field of the latest conditions of the project environment and the demand forecast in order to reflect the specific purposes of the project/study concerned.

# 7. MEMBER LIST

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| 3 | Member | Dr. Ismail Mubarak | Expert, Marine Transportation |
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