APPENDICES

Appendix-1 Interview Surveys

Appendix-1 Interview Surveys

1. Methodology of Interview Surveys

1.1 General

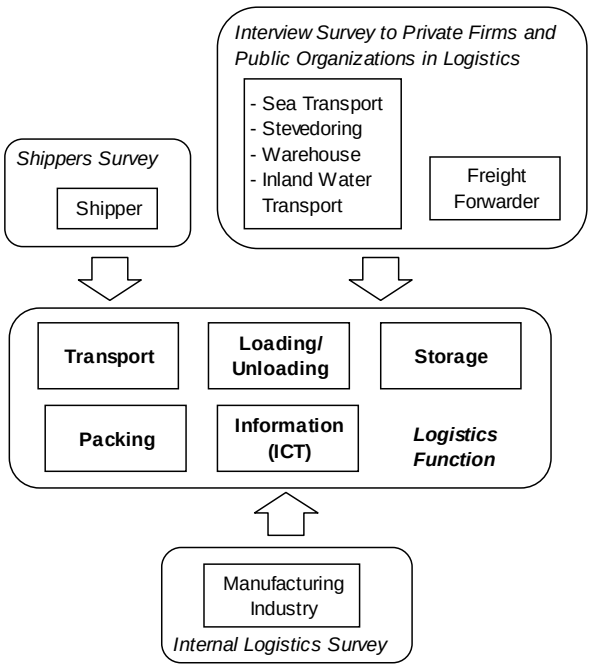
In order to assess the present condition of logistics in Egypt and to get an understanding of the opinions, intentions and strategies for future logistics development, the surveys shown in Table A1.1.1 were implemented by a local consultant (Transportation Planning Centre TRANS PLAN) in consultation with the JICA Study Team.

Table A1.1.1 Outline of Interview Surveys

Surveys	Objectives	Outline
Shipper survey	• To determine the route of material flow, route facilities, modes, packing condition, shipping cost, shipping time, etc., • Collection of the data for preparation of the OD table, and • To determine the intention and challenges of the shippers.	• 3 types of surveys were implemented. -Shipper Interview Survey, -Annual Commodity Survey, and -3 Days Commodity Flow Survey. • 508 samples were collected. These samples were extracted by commodity items.
Interview survey to private firms and public organizations in logistics	• Collection of data on the state of activities, contents of activities, and management state Characterization and fact-finding on logistics condition	• Interview survey was implemented. • 261 samples were collected. - Sea transport 52 samples - Stevedoring 5 samples - Warehouse 2 samples - Inland water transport 3 samples - Freight forwarder 199 samples
Internal logistics survey	• Characterization and fact-finding on the logistics system, • To determine the best practice for promotion of more efficient logistics, and • Identifying bottlenecks in terms of logistics inside the enterprises.	• Interview survey was implemented. • 102 samples from the manufacturing industry were collected.

Source: JICA Study Team

With regard to logistics in Egypt, the United States Agency for International Development (USAID) conducted "Monitoring and Reducing Time of Release of Egyptian Imports" in 2004 - 2006 with a focus on time of release for shipments in ports, through a questionnaire survey in cooperation with the General Organization for Export and Import Control (GOEIC). On the other hand, the surveys in the JICA Study aim at obtaining and analyzing the data/information from governmental and private organizations/companies related to overall logistics processes from the viewpoint of the international trade. As illustrated in Figure A1.1.1, the interview items of each survey were designed to



Source: JICA Study Team

Figure A1.1.1 Concept of Interview Surveys

consider logistics functions including transport, loading/unloading, storage, packing and information. In addition, in order to capture customs procedure conditions, several interview items were included in the shipper survey. The survey method and interview items were finalized to reflect comments obtained through discussions with the Counterpart Team members and Steering Committee members.

1.2 Description of Interview Surveys

1.2.1 Shipper Survey

(1) Objectives of Survey

Objectives of the survey are as follows:

a) To understand the present logistics problems and the different needs of shippers,

b) To understand the present conditions of logistics infrastructure for shippers, and

c) To collect the basic data required to understand the present logistics movements, such as origin, destination, route, facilities, mode of transport and so on.

(2) Methodology

This survey was conducted by distributing questionnaires to selected shipper companies. The interviewers visited them and explained the objectives of the survey, requested cooperation and explained the contents of the survey sheets. If a suitable company representative was available, the interviewer directly interviewed him/her. In cases where there were difficulties in meeting the representative or they were unable to fill out all interview items at once, the survey sheets were collected by the interviewers at a later date. Survey sheets are composed of “Shipper Interview Survey”, “Annual Commodity Survey” and “Three days Commodity Flow Survey”.

(3) Survey Target

Shipper companies dealing with imported and exported commodities of Egypt were targeted. The types of business were assumed to be agriculture, forestry and fisheries industry, mining, manufacturing, and wholesale industry, but didn’t include the retail trade. The companies were selected as follows:

a) Selection of Target Commodities

Based on international trade statistics in accordance with HS[1] code classification according to the Central Agency for Public Mobilization and Statistics (CAPMAS), the amounts of export and import commodities in Egypt in 2005 are as shown in Table A1.2.1 and A1.2.2.

The commodities covering 90%, by weight, of the total traded volume, excluding chapter code 27 (natural gas and crude oil, etc), were selected as the target commodities in the JICA Study. This is because much of chapter code 27 is deemed to be transported by pipelines and little transported by the existing transport modes.

[1] The Harmonized Commodity Description and Coding System generally referred to as "Harmonized System" or simply "HS", is a multipurpose international product nomenclature developed by the World Customs Organization (WCO). It comprises about 5,000 commodity groups, each identified by a six digit code, arranged in a legal and logical structure and is supported by well-defined rules to achieve uniform classification. The system is used by more than 190 countries and economies as a basis for their Customs tariffs and for the collection of international trade statistics. Over 98 % of the merchandise in international trade is classified in terms of the HS. (Referred from WCO website)

Table A1.2.1 Exported Commodities in 2005 (sorted by weight base)

seq	HS code (2-digit) and description	Weight (ton)	Accum.(%)
1	27: Mineral Fuels, Mineral Oils and Products Or Their Distillation; Bituminous Substances; Mineral Waxes	17,664,780	-
2	25: Salt, Sulphur, Earths and Stone; Plastering Materials, Lime and Cement	8,644,328	58.8%
3	72: Iron and Steel	1,267,047	67.4%
4	10: Cereals	1,121,478	75.1%
5	07: Edible Vegetables and Certain Roots and Tubers	859,234	80.9%
6	17: Sugars and Sugar Confectionery	597,361	85.0%
7	08: Edible Fruit and Nuts; Peel of Citrus Fruit or Melons	318,144	87.1%
8	39: Plastics and Articles Thereof	289,283	89.1%
9	28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, Of Rare-earth Metals, of Radioactive Elements or of Isotopes	203,929	90.5%
10	31: Fertilizers	148,112	91.5%
11	68: Articles of Stone, Plaster, Cement, Asbestos, Mica or Similar Materials	143,598	92.5%
12	73: Articles of Iron Or Steel	141,293	93.4%
13	52: Cotton	122,606	94.3%
14	12: Oil Seeds and Oleaginous Fruits; Misc. Grains, Seeds & Fruit; Industrial or Medicinal Plants; Straw and Fodder	84,567	94.9%
15	76: Aluminium and Articles Thereof	83,967	95.4%
16	Others	672,794	4.6%
	Total (Total except chapter 27 goods)	32,362,521 (14,697,741)	100%

Source: CAPMAS Database

Table A1.2.2 Imported Commodities in 2005 (sorted by weight base)

seq	HS code and description	Weight (ton)	Accum.(%)
1	10: Cereals	10,793,883	43.4%
2	27: Mineral Fuels, Mineral Oils and Products Or Their Distillation; Bituminous Substances; Mineral Waxes	7,345,934	-
3	72: Iron and Steel	3,307,785	56.8%
4	15: Animal or Vegetable Fats and Oils and their Cleavage Products; Prepared Edible Fats; Animal or Vegetable Waxes	1,072,555	61.1%
5	31: Fertilizers	980,035	65.0%
6	23: Residues and Waste From the Food Industries; Prepared Animal Fodder	965,536	68.9%
7	26: Ores, Slag and Ash	769,032	72.0%
8	12: Oil Seeds and Oleaginous Fruits; Misc. Grains, Seeds & Fruit; Industrial or Medicinal Plants; Straw and Fodder	665,864	74.7%
9	39: Plastics and Articles Thereof	649,619	77.3%
10	07: Edible Vegetables and Certain Roots and Tubers	607,685	79.7%
11	17: Sugars and Sugar Confectionery	587,753	82.1%
12	48: Paper and Paperboard; Articles of Paper Pulp, of Paper Or of Paperboard	519,567	84.2%
13	29: Organic Chemicals	440,761	86.0%
14	11: Products of the Milling Industry; Malt; Starches; Inulin; Wheat Gluten	370,076	87.5%
15	73: Articles of Iron Or Steel	339,454	88.8%
16	74: Copper and Articles of Thereof	232,716	89.8%
17	28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, Of Rare-earth Metals, of Radioactive Elements or of Isotopes	193,964	90.5%
18	02: Meat and Edible Meat Offal	192,297	91.3%
19	03: Fish & Crustaceans, Molluscs & Other Aquatic Invertebrates	188,524	92.1%
20	54: Man-made Filaments	143,557	92.7%
21	84: Nuclear Reactors, Boilers, Machinery and Mechanical Appliances; Parts Thereof	133,690	93.2%
22	70: Glass and Glassware	119,900	93.7%
23	87: Vehicles Other Than Railway Or Tramway Rolling-stock, and Parts and Accessories Thereof	106,407	94.1%
24	38: Misc. Chemical Products	102,821	94.5%
25	08: Edible Fruit and Nuts; Peel of Citrus Fruit or Melons	95,217	94.9%
26	32: Tanning Or Dyeing Extracts; Tannins & Their Derivatives; Dyes, Pigments Other Colouring Matter; Paints and Varnishes; Putty and Other Mastics; Inks	95,132	95.3%
	Others	1,173,117	4.7%
	Total (Total except chapter 27 goods)	32,191,984 (24,846,050)	100.0%

Source: CAPMAS Database

In addition to the above selection, chapter code 30 (medical products), 31 (fertilizer), 52 (cotton), 61-62 (cloths), 63 (textile), 68 (stone, cements), 69 (ceramics) were also selected as the target commodities. These commodities are traditionally exported and there is a possibility of increasing the trade volumes in the future.

b) Selection of Shipper Companies by Commodity Type

Prior to the field interview survey, shipper companies were selected from a commercial database using the following procedures:

- A larger number of export companies was considered, compared with the number of import companies because of export promotion,
- In order to prevent duplicate selection of the same shippers in the company list, the shippers handling several commodities were selected by a representative commodity, and
- In cases where the shippers handle both export and import commodities, the shippers were selected by the export commodity.

Through above selection, 384 export companies and 138 import companies (522 companies in total) were selected as described in Table A1.2.3 and A1.2.4.

Although the field interview survey was carried out on the selected companies, it was difficult to contact some companies due to changes in telephone numbers or closure of their business. In this case, similar companies were selected in the field interview survey stage. As a result of the field survey, 508 samples were obtained.

Table A1.2.3 Number of Selected Export Companies

seq	HS code (2-digit) and description	Number
1	27: Mineral Fuels, Mineral Oils and Products Or Their Distillation; Bituminous Substances; Mineral Waxes	15
2	25: Salt, Sulphur, Earths and Stone; Plastering Materials, Lime and Cement	26
3	72: Iron and Steel	16
4	10: Cereals	19
5	07: Edible Vegetables and Certain Roots and Tubers	57
6	17: Sugars and Sugar Confectionery	11
7	08: Edible Fruit and Nuts; Peel of Citrus Fruit or Melons	35
8	39: Plastics and Articles Thereof	7
9	28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, Of Rare-earth Metals, of Radioactive Elements or of Isotopes	6
	Sub total	**192**
	30: Pharmaceutical Products	27
	31: Fertilizers	34
	52: Cotton	23
	61: Articles of Apparel and Clothing Accessories, Knitted or Crocheted	66
	62: Articles of Apparel and Clothing Accessories, Not Knitted or Crocheted	6
	63: Other Made Up Textile Articles; Sets; Worn Clothing and Worn Textile Articles; Rags	8
	68: Articles of Stone, Plaster, Cement, Asbestos, Mica or Similar Materials	24
	69: Ceramic Products	4
	Sub total	**192**
	Total	**384**

Source: JICA Study Team

Table A1.2.4 Number of Selected Import Companies

Seq	HS code and description	Number
1	10: Cereals	45
2	27: Mineral Fuels, Mineral Oils and Products Or Their Distillation; Bituminous Substances; Mineral Waxes	5
3	72: Iron and Steel	8
4	15: Animal or Vegetable Fats and Oils and their Cleavage Products; Prepared Edible Fats; Animal or Vegetable Waxes	14
5	31: Fertilizers	17
6	23: Residues and Waste From the Food Industries; Prepared Animal Fodder	1
7	26: Ores, Slag and Ash	13
8	12: Oil Seeds and Oleaginous Fruits; Misc. Grains, Seeds & Fruit; Industrial or Medicinal Plants; Straw and Fodder	6
9	39: Plastics and Articles Thereof	8
10	07: Edible Vegetables and Certain Roots and Tubers	2
11	17: Sugars and Sugar Confectionery	4
12	48: Paper and Paperboard; Articles of Paper Pulp, of Paper or Paperboard	9
13	29: Organic Chemicals	2
14	11: Products of the Milling Industry; Malt; Starches; Inulin; Wheat Gluten	1
15	73: Articles of Iron Or Steel	1
16	74: Copper and Articles of Thereof	1
17	28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, Of Rare-earth Metals, of Radioactive Elements or of Isotopes	1
	Total	**138**

Source: JICA Study Team

(4) Survey Items

As mentioned earlier, the shipper survey is composed of three kinds of survey and the items in each survey are described below:

a) Shipper Interview Survey

The shipper interview survey was implemented in order to obtain the following information:

- General information (location, number of employees, year of establishment, capital, annual turnover, owned vehicles, etc.),
- Procedure at the customs clearance prior to shipment of commodity,
- Procedure at the customs clearance prior to arrival of commodity,
- Variety of transport modes and modal shift, and
- Others.

b) Annual Commodity Survey

The annual commodity survey was implemented to get an understanding of the annual commodity movement including the following data:

- Annual received materials data (origin, volume weight by transport mode),
- Annual shipped commodities data (destination, volume weight by transport mode), and
- Monthly fluctuation data.

c) Three Days Commodity Flow Survey

The three days commodity flow survey was implemented to grasp the shipped

commodity flows during three days from 15 to 17 January 2007. The survey items were origin, transport route, mode, destination, volume weight, shipping time and shipping cost.

In the field interview survey, the following was observed, with remarks relating to the survey items:

- The important measures including "supply chain management (SCM)", "just in-time delivery" and ICT were not fully recognized.
- Since some shippers manually recorded commodity volumes for input (shipping in) and output (shipping out), it was necessary to go through several documents to obtain the percentage by month for input and output commodities in the annual commodity survey form.
- The three day commodity flow survey was contained detailed questions so the return rate of respondents was lower than that of the annual commodity survey.

1.2.2 Interview Survey of Private Firms and Public Organizations in Logistics

(1) Objectives of Survey

Objectives of the survey were to collect information on the state of activities, extent of activities, transport capacity, loading/unloading equipment, storage conditions and operational conditions for the private firms and public organization in logistics.

(2) Methodology

This survey was conducted by distributing the questionnaires to the selected major private firms and public organizations. Interviewers visited them and interviewed them on the survey items. Survey sheets are designed by type of sector related to logistics and composed of "Sea Transport Survey", "Stevedoring Survey", "Warehouse Survey", "Inland Waterway Transport Survey" and "Freight Forwarder Survey".

(3) Survey Target

Major firms/organizations were selected. The number of samples by type of sector and method of selection are summarized below:

Table A1.2.5 Survey Target

Type of Sector	No. of samples	Method of Selection
Sea transport	52	Firstly, all Egyptian sea transport companies which mainly handle the freight cargo were selected from the "Member list of Alexandria Chamber of Shipping" and other available data source. Secondly, agency companies and foreign shipping companies, which have service lines from/to Egyptian ports for freight cargoes, were selected in order to obtain more samples.
Stevedoring	5	Considering major ports and operators, the following companies were selected: - Alexandria Container Handling Co., Ltd., - Damietta Container Handling Co., Ltd., and - Port Said Container Handling Co., Ltd. - Al Arabia Al Motaheda for stevedoring - Suez for Auto Stevedoring
Warehouse	2	Since major warehouse companies are limited, the following companies, which were listed through interviews with companies related to logistics, were selected: - General Warehouse of Egypt, and - Egyptian Supply and Marine Works.
Inland Waterway Transport	3	The following major inland waterway transport companies were selected: - General Nile Company for inland water transport (public), - Sugar Company, and - Egyptian Company for maritime works. Two public companies were merged into one company a few years ago. There is only one public inland waterway transport company at present.
Freight Forwarder	199	Both public and private companies were selected. The companies were selected by referring to the "Egyptian International Freight Forwarding Association Members Directory 2006".
Total	261	

Source: JICA Study Team

(4) Survey Items

In order to understand the characteristics related to logistics, the survey items for each type of sector were prepared and summarized as described in Table A1.2.6.

Small-scale freight forwarders, which have significantly high share of the business in Egypt, were included as interviewees in this survey. They are operating a few staffs without warehouse, storage, or terminal facility and work in accordance with their experience or tradition. Since the survey items for the freight forwarders covered not only the freight transport operation but also the facility and equipment conditions, it was difficult for the small-scale freight forwarders to answer all questions.

Table A1.2.6 Survey Item by Type of Sector

Type of Sector	Survey Item
Sea transport	- General information (address, number of employees, etc), - Cargo handling volume, - Data of owned vessels (dimension, capacity, service route, etc), and - Future plan and perspective, comments and suggestions.
Stevedoring	- General information (address, number of employees, etc), - Cargo handling volume, and - Future plan and perspective, comments and suggestions.
Warehouse	- General information (address, number of employee, etc), - Number and area of warehouses, - Cargo handling volume, and - Future plan and perspective, comments and suggestions.
Inland Waterway Transport	- General information (address, number of employees, etc), - Cargo handling volume, - Data of owned vessels (dimension, capacity, service route, etc), and - Future plan and perspective, comments and suggestions.
Freight Forwarder	- General information (address, number of employees, etc), - Facility and equipment conditions related to logistics, - Handling commodity volume, - Freight transport operation, and - Future plan and perspective, comments and suggestions.

Source: JICA Study Team

1.2.3 Internal Logistics Survey

(1) Objectives of Survey

Objectives of the survey were to collect basic information such as the actual conditions and features of the internal logistics in the companies.

(2) Methodology

This survey was conducted by questionnaires to the representatives of the selected companies, which have warehouse, plant or manufacturing center. Interviewers visited them and directly interviewed them about the questions. In cases where the representatives were not available, the interviewers collected the sheets at a later date.

(3) Survey Target

102 companies were selected. These were extracted from the 508 companies selected in the shipper survey.

(4) Survey Items

This survey was conducted to collect the following data:

a) General information,
b) Material handling equipments and facilities,
c) Location,
d) Operation and management conditions, and
e) Present condition and future plan about installation of Information and Communication Technology (ICT).

1.3 Survey Implementation

Since surveys focusing on the overall logistics process are different from conventional surveys such as traffic count surveys, OD interview surveys and so on, there were difficulties during the survey period. By overcoming the difficulties in consultation with the JICA Study Team, the surveys were persistently executed to obtain reliable and sufficient information/data from logistics-related organizations and companies. The major events relating to the survey implementation are summarized below:

(1) The survey was hampered by bad weather conditions in Alexandria and official holidays in Egypt. The survey period was extended five days from the original period.

(2) Due to the limited survey period, interviewers had to operate all over Egypt at the same time.

(3) Though the survey forms were sufficiently discussed between the JICA Study Team and Egyptian side, interview items relating to ICT were difficult for some company representatives to understand.

(4) In spite of using the latest company database giving the name, address, telephone/fax number and main activity and the yellow page book prior to the field interview survey, some companies had wrong telephone numbers or did not exist. In addition, some companies had a different main activity from that mentioned in the company list. At the field survey stage, the number in the sample was secured by finding similar companies.

(5) Some company representatives could not submit the filled-out survey forms without approval from the chairman or the managing director. In addition, the huge number of interview items prepared to cover various aspects of logistics made it difficult for company representatives to fill-out the form immediately. In these cases, the forms were forwarded by fax or mail.

(6) In order to avoid misunderstanding of survey objectives, a supporting letter for the surveys was issued by the Transport Planning Authority (TPA).

(7) Most of the company representatives were hesitant to answer sensitive questions, such as capital amount and annual turnover in general information of the survey items. It is necessary to identify company size or scale, from other information such as the total number of employees, handling cargo volumes, etc.

2. Results of Interview Surveys

2.1 Result of Shipper Survey

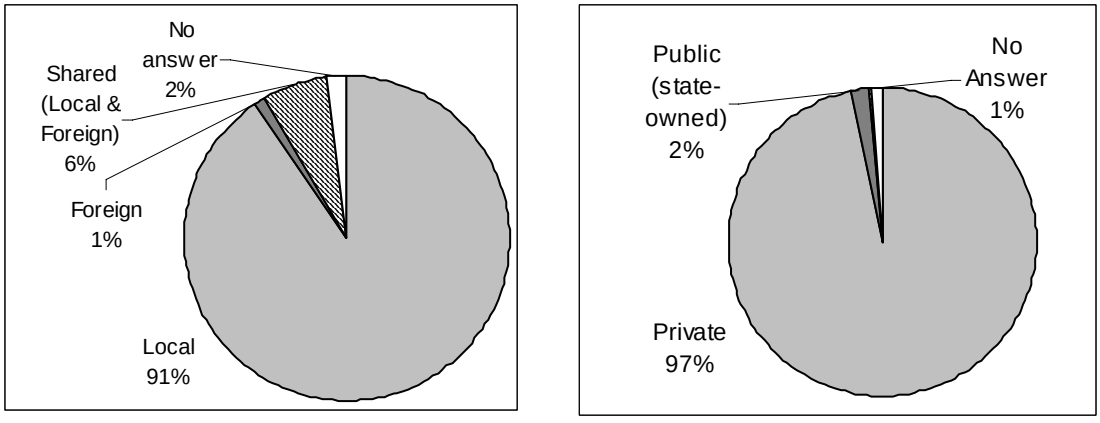
2.1.1 Features of Surveyed Companies

508 companies which have various business activities were obtained from the shipper survey. The general features are described below:

(1) Company Profile

Local (Egyptian) companies constituted the largest portion with 91%, while foreign and shared (local & foreign) companies account for only 7%.

The private ownership had the dominant share with 97%. The public (state-owned) was only 2% or 10 samples, of which one was Yara Agri-trade of Norwegian state-owned company established by local and foreign funds (mainly Norwegian fund). The business field is the supplier of plant nutrients in the form of mineral fertilizers.



Company Type　　Company Ownership

Figure A2.1.1 Company Profile

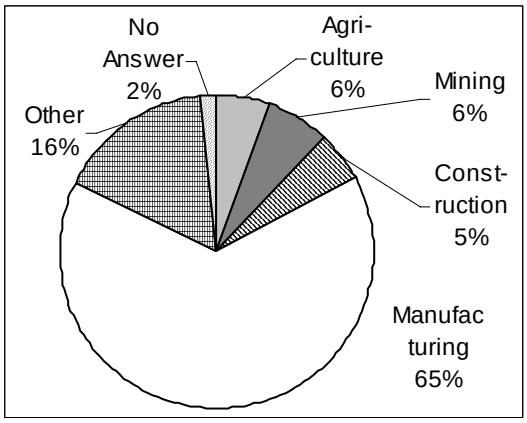
(2) Service/Business Type and Company Scale

In terms of service/business type, manufacturing was the highest share accounting for 66%. The manufacturing companies consist of various sectors including light (food, beverage, tobacco, garment, pulp, paper, spinning, wood and leather), chemical, mechanical, electricity and iron/steel/metal.

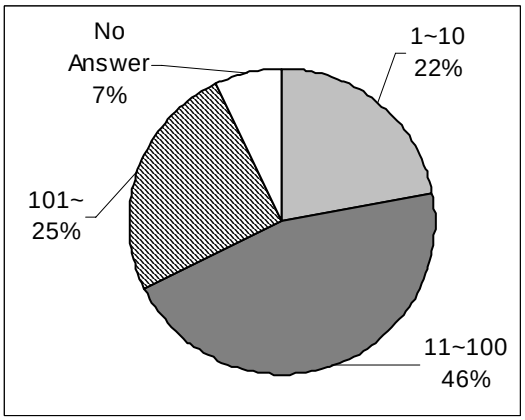
In order to measure the company scale, number of employees is one of significant factors[2]. The result indicated that the highest share was 11 to 100 employees with 46%. Large-scale companies which have more than 101 employees account for 25%.

According to relationship between service/business type and number of employees, the "manufacturing" companies had relatively large number of employees. "Other" companies were small scale companies, because they included export/import trading companies and distributors which are generally operating small scale business without factory/warehouse.

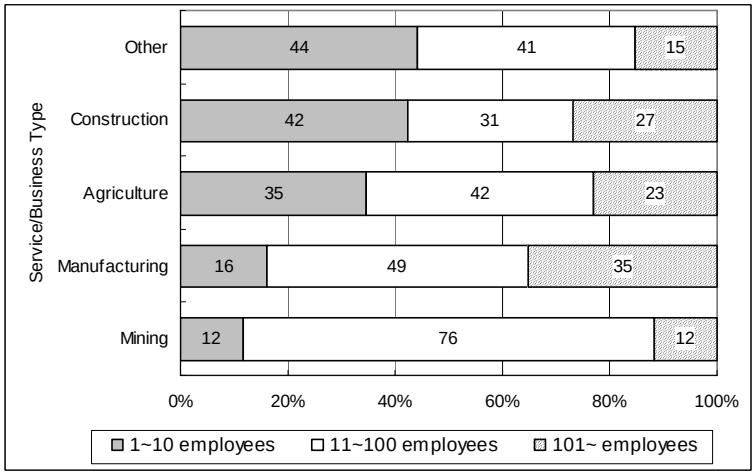
[2] Capital amount was included in interview items to measure the company scale. However, 190 samples were "no answer" due to hesitation to reveal company's confidence. Therefore, number of employees was used in this analysis.



Service/Business Type



Number of Employees



Relationship between Service/Business Type and Number of Employees

Figure A2.1.2 Service/Business Type and Number of Employees

More than half of the surveyed companies were established after 1991. The establishment of the surveyed companies was the most attractive in the 1990s. The tendency was observed by all service/business type.

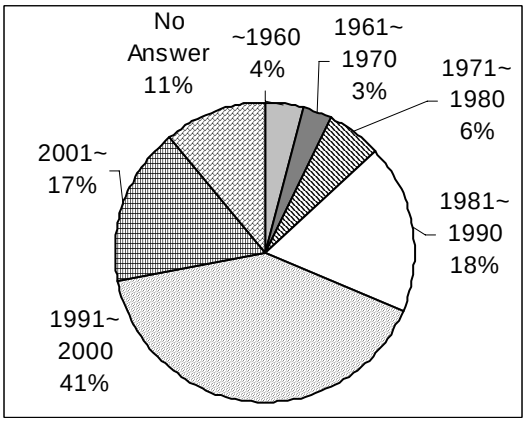


Figure A2.1.3 Year Established

2.1.2 Transport Mode

(1) Ownership of Trucks

Regarding ownership of trucks, 39% of the surveyed companies owned their trucks, of which 75% owned only one to five vehicles. The result indicates that most of the companies don't own trucks and may depend on outsourcing transportation for their materials and products.

In manufacturing sector, only Al Ahram Beverages Company owned a huge number of trucks, more than 500 trucks and operated 78 warehouses for its market needs extended all through the Egyptian land[3].

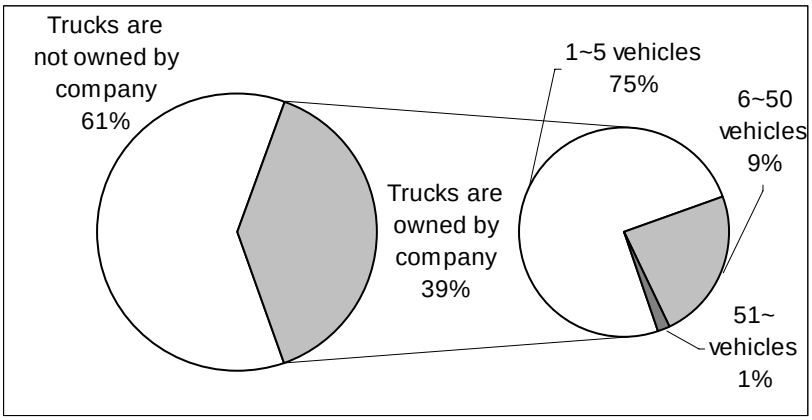


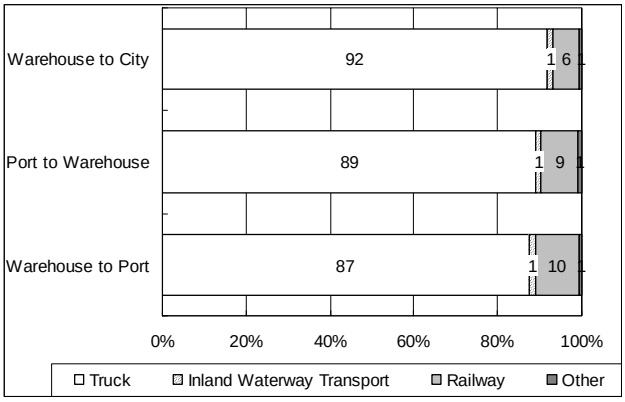
Figure A2.1.4 Ownership of Trucks

(2) Transport Modes

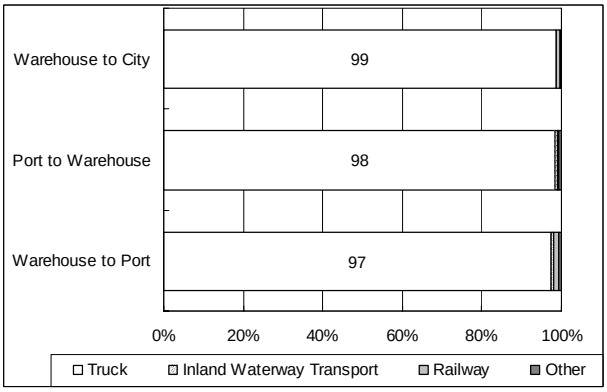
As illustrated in Figure A2.1.5, the substantial transport mode for raw materials and products was trucks. Particularly, trucks were used to transport products among warehouse, city and port. It seems that trucks are a reliable transport mode for shippers from viewpoints of transport time and cost.

Railway accounted for about 10% of all modes among warehouse, city and port. The railway share of the surveyed companies showed higher percentage compared with actual mode share of freight transport. This reason can be explained that the some surveyed companies were transported considerable amount of chemical products by railway. On the other hand, Inland Waterway Transport (IWT) indicated significantly low share of all modes with less than 1%.

[3] According to web-site, Al Ahram Beverages Company was successfully privatized from the Egyptian government in 1997. Since its privatization, Al Ahram Beverages Company built on its monopoly position in the local market to expand its activities into a full-fledged range of beverages including beer, wine, and non-alcoholic carbonated and other soft drinks. (http://www.ameinfo.com/financial_markets/Egypt/Company_EG0003/)



Transport Mode for Raw Materials



Transport Mode for Products

Figure A2.1.5 Transport Modes

(3) Shipper reasons related to Railway and IWT

The reasons for not using the railway and IWT were shown in Figure A2.1.6. In terms of railway, more than 20% of the surveyed companies answered low frequency, trouble to transfer goods and poor level of service. For IWT, trouble to transfer goods was pointed out as primary reason. Since the surveyed companies accept the present safety condition and transportation cost of railway and IWT, these reasons indicated comparatively low percentage.

From the viewpoint of benefit, 50% of the surveyed companies felt “no benefit of using railway”, while 62% of them felt “no benefit of using IWT”.

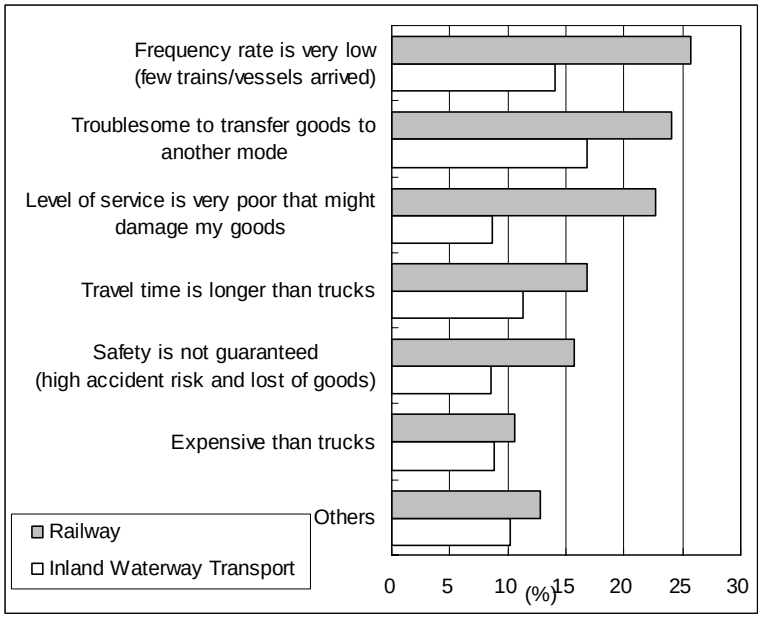
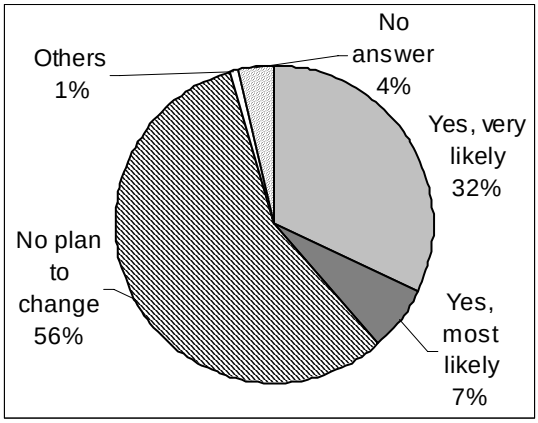
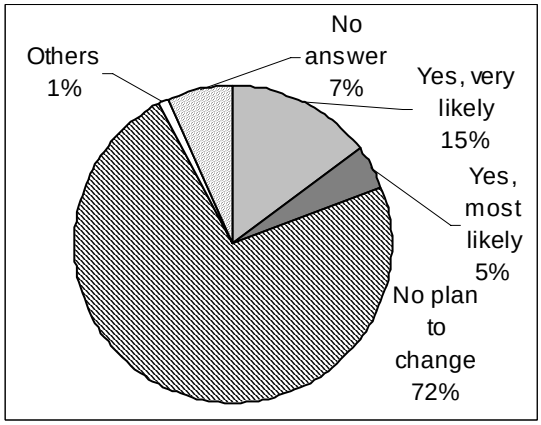


Figure A2.1.6 Reasons for Not Using Railway and IWT

If improvement is made with railway, 39% of the surveyed companies had a possibility to change their transport mode from trucks to railway. On the other hand, 72% of the surveyed companies intend to use trucks even if IWT is improved from present conditions.



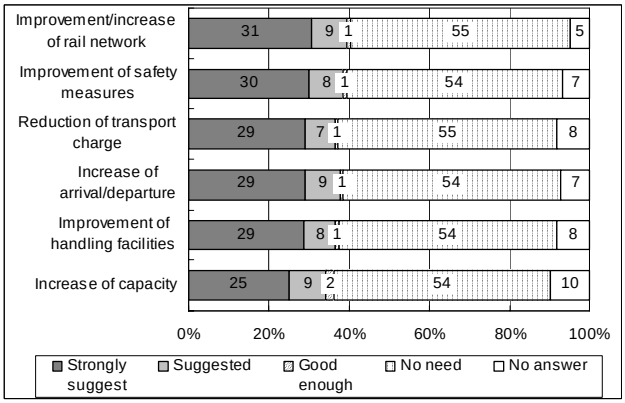
Railway



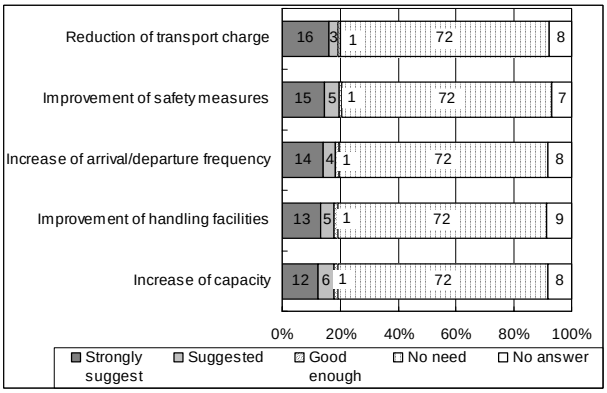
Inland Waterway Transport

Figure A2.1.7 Possibility of Modal Shift in case of Improvement of Railway and IWT

The measures of improving the railway and IWT were almost at the same degrees. The surveyed companies strongly suggested enforcing the measures of railway, compared with those of IWT, which may indicate expectation of railway development in the future.



Railway

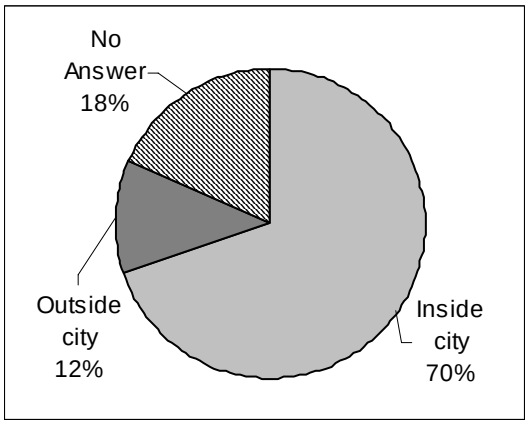


Inland Waterway Transport

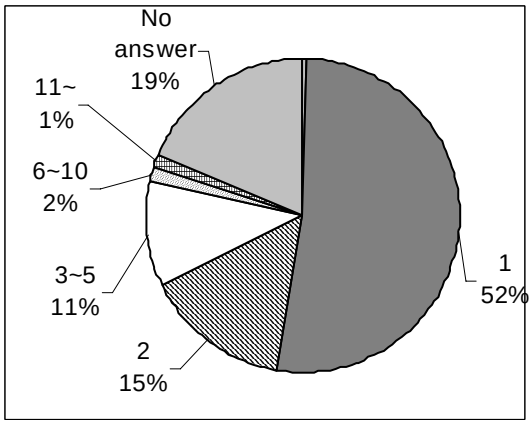
Figure A2.1.8 Suggestion of Measures to Improve Railway and IWT

2.1.3 Features Related to Warehouse/Manufacturing Center

70% of the surveyed companies have their warehouses/manufacturing centers inside the city. More than half of the surveyed companies owned only one warehouse/manufacturing center. Only 3% owned more than six warehouses/manufacturing centers.



Location of Warehouse/Manufacturing Center



Number of Warehouses/Manufacturing Centers

Figure A2.1.9 Features of Warehouse/Manufacturing Center

2.1.4 Features related to Logistics

More than half of the surveyed companies dealt with all logistics functions ("storage", "loading and unloading", "assemble", "packing and wrapping" and "information and commercial trade"). On the other hand, "transport", "delivery" and "pick-up" indicated slightly higher share of partly or completely outsourcing. The answer of 40% of the surveyed companies was "no answer or not applicable" regarding Information and commercial trade (quality & quantity control, placing and receiving order). The reason may be that modern logistics systems such as Information and Communication Technology (ICT) are not sufficiently widespread into the surveyed companies. In logistics functions, transport, delivery and pick-up are outsourced by surveyed shipper companies. It is necessary to enhance forwarding industry.

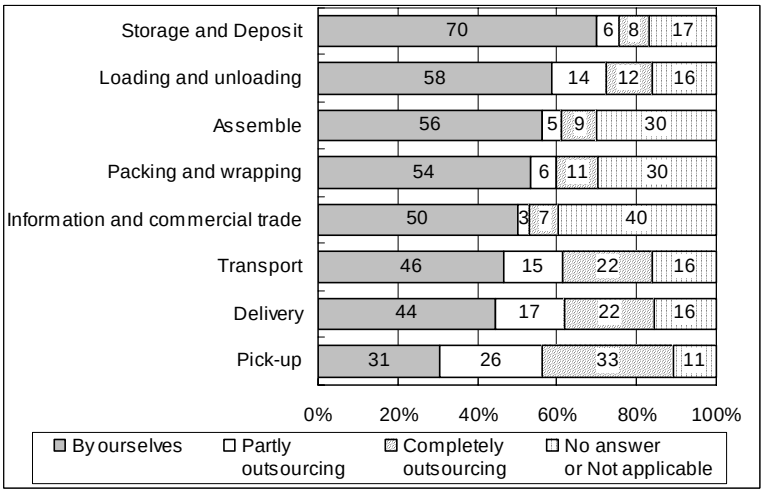


Figure A2.1.10 Responsible Party by Each Logistics Function

72% of the surveyed companies were "no answer or not applicable" regarding "cooperation with other companies like consolidation of goods" However, "Supply Chain Management (SCM)" which is one of management methods on business activities was currently practiced by 46% of the surveyed companies to make more profits. It is recommended to be applied

measures to strengthen logistics functions for promoting export and import industries.

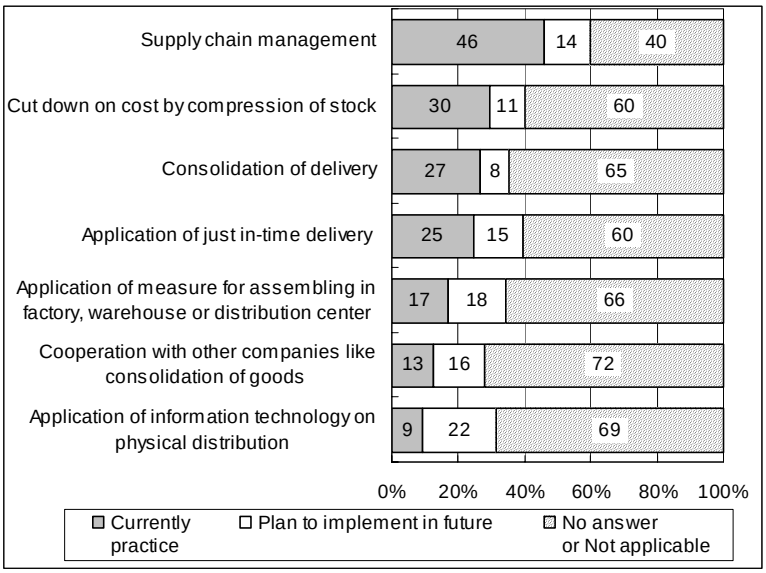


Figure A2.1.11 Measures Being Practiced by Companies

Figure A2.1.12 shows ratio of each cost in total logistics cost. Transportation cost accounts for high percentage in total logistics cost. Therefore, the transport cost is a key factor for surveyed shipper companies.

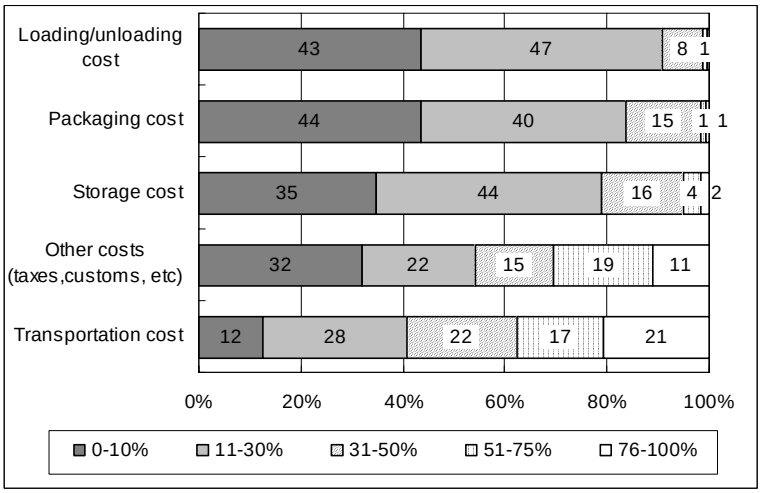


Figure A2.1.12 Ratio of Each Cost in Total Logistics Cost

Table A2.1.1 shows the calculated values with the weighted score in accordance with its priority. As a result, “improvement of road network” was ranked as the top priority (26.7%) followed by “improvement of traffic management” (22.9%) and “simplification of customs procedure” (22.5%). Meanwhile, measures for “improvement of checking/verification system at port to make it fast” and “increase of container terminal/port capacity” were positioned as lower priorities.

Table A2.1.1 Evaluation Score of Measures to Improve Logistics

Measure	1st Priority	2nd Priority	3rd Priority	4th Priority	5th Priority	Total	%	Rank
Improvement of road network	1,110	512	156	88	26	1,892	26.7%	1
Improvement of traffic management	410	772	288	110	46	1,626	22.9%	2
Simplification of customs procedure	695	268	477	94	60	1,594	22.5%	3
Improvement of checking/verification system at port to make it fast	85	188	219	360	156	1,008	14.2%	4
Increase of container terminal / port capacity	65	152	276	290	184	967	13.6%	5
					Total	7,087	100.0%	

Note: 1st priority = Number of companies multiplied by 5, 2nd priority = Number of companies multiplied by 4, 3rd priority = Number of companies multiplied by 3, 4th priority = Number of companies multiplied by 2, 5th priority = Number of companies multiplied by 1.

2.1.5 Customs Clearance

In terms of customs clearance procedures for export and import, more than 70% of the surveyed companies outsourced to carrier or third party as illustrated in Figure A2.1.13.

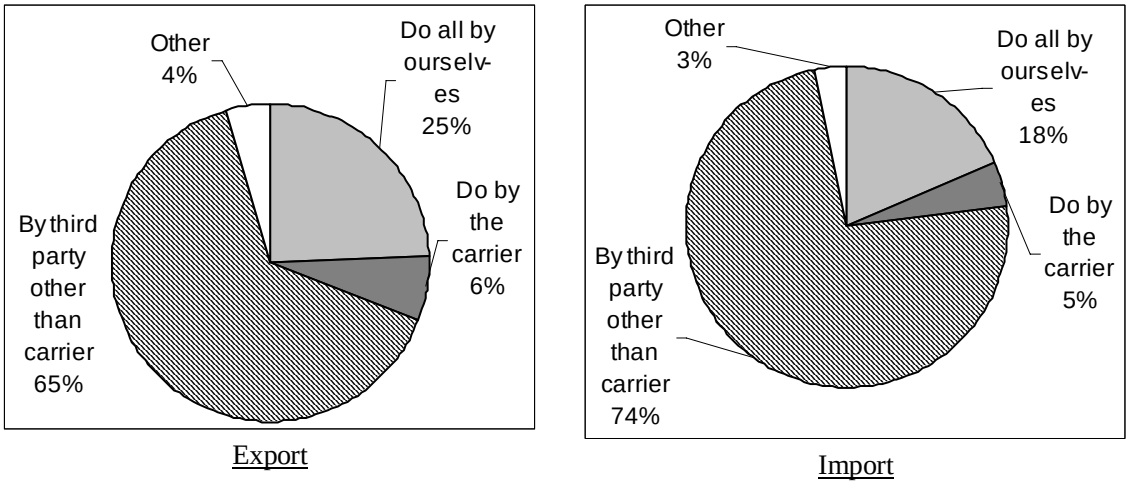
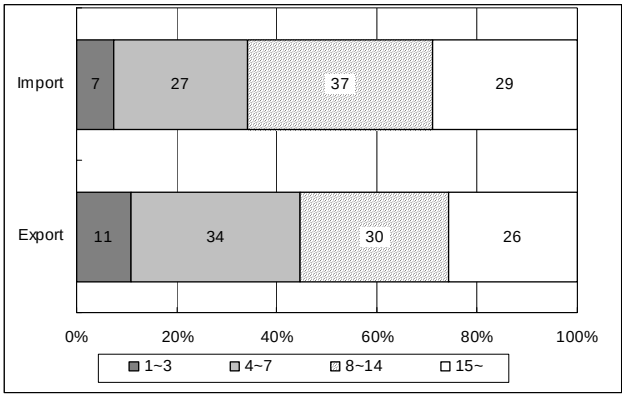
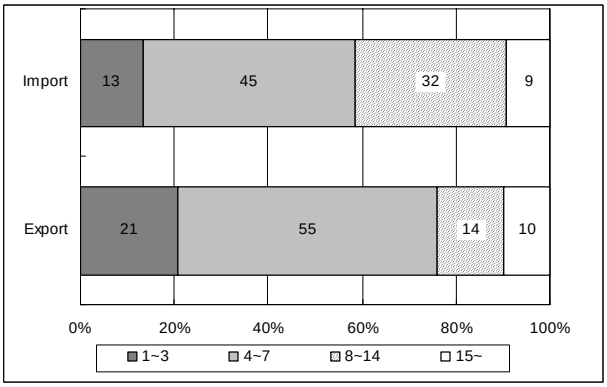


Figure A2.1.13 Arrangement for Customs Clearance

The number of necessary signatures and documents for import and export was different, because the requirements depend on many factors including commodity type, importing/exporting countries, etc.



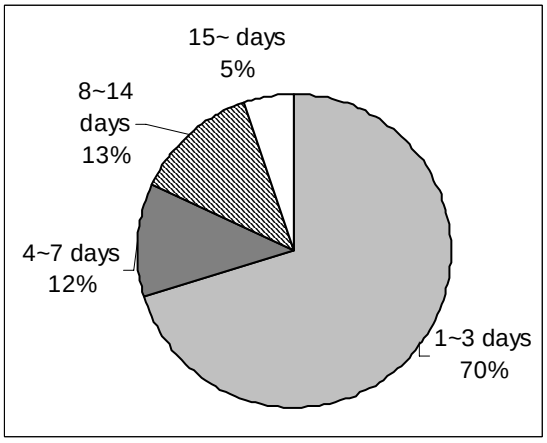
Signatures



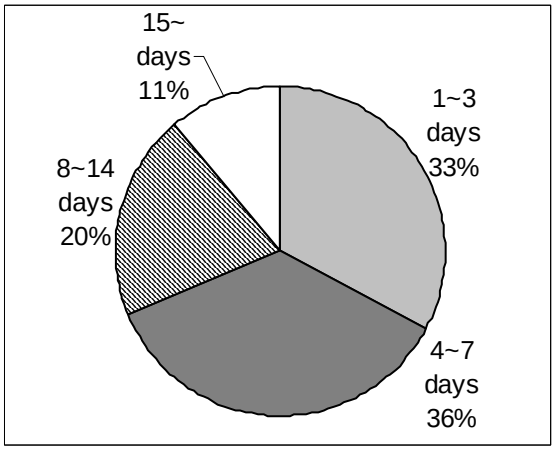
Documents

Figure A2.1.14 Number of Necessary Signatures and Documents to Clear at Customs Office

The number of days to clear imported materials and exported products at customs office is illustrated in Figure A2.1.15. Average number of days for export was 4.1 days, while that for import was 7.5 days.



Export



Import

Figure A2.1.15 Number of Days for Customs Clearance

2.1.6 Shipper's Future Plan

Various future plans were obtained from the surveyed companies and summarized below:

(1) Facility and Equipment

- Building of factory/branch,
- Building of new warehouse close to custom office,
- Building of new warehouses with high security,
- Purchase of container/truck/equipment/machine/crane, and
- Construction of new production line.

(2) Logistics

- Improvement of packing system,
- Development of storage system,
- Improvement of IT system to link warehouses with sales orders,

- Development of logistics management in the company, and
- To design certificate for import to simplify the customs procedure.

(3) Business Activities

- Employment of more labors,
- Increase of capital amount,
- Development of more industries in industrial zones,
- Expansion of business activities,
- Expansion of market,
- Enhancement of small manufactures with more practical ways,
- Production of high quality products, and
- Increase of imported quantities.

2.1.7 Shipper's Opinion

In the questionnaire, a wide variety of comments/suggestions to the government to improve the facilitation of business activities were collected with free response question. The comments/suggestions classified by each sector are described in order of number of response, as follows

(1) Customs and Tax

- Facilitation of customs procedures,
- Decreasing custom fee and tax,
- Stabilization of the customs laws, such as sudden changes in the tariff categories,
- Speeding up customs procedures,
- Reduction of the number of signatures and documents needed for custom clearance,
- Facilitating procedures to have approval of licenses,
- Reduction of the number of certificates required for import,
- Reduction of the waiting time for goods in custom houses,
- Education and training of customs officers,
- Transparency between the government and companies in terms of taxes system, and
- Development of payment system for custom fees and taxes at any branch in Cairo or other cities.

(2) Transport

- Enhancement of modal shift among road transport, railway and inland waterway transport,
- Construction of railway network,
- Provision of financial supports for cargo transportation,
- Facilitation of accessible cargo transport to all city area,
- Improvement of road transport network to connect new cities,
- Improvement of inland waterway transport network,
- Improvement of means of transport inside ports,
- Facilitation of cargo tracing system inside ports,
- Traffic management to provide smooth traffic flow,
- Standardization of toll roads for heavy vehicles,
- To ensure safety in ports, and
- Insurance system for damage of goods.

(3) Infrastructure Related Logistics

- Establishment of container terminal near the city,
- Development of new ports,

- Development of suitable warehouses to store agricultural products during harvest season,
- To promote installation of reefer container to keep the food products,
- Improvement of the communication network such as internet,
- Increase of storage area in ports to secure safety,
- Provision of restaurants and service area along roads,
- Development of logistics center in industrial zones,
- Improvement of services in the industrial zone, and
- Development of available communication network for logistics.

(4) Policy/Strategy/Laws

- Transfer of markets outside Cairo,
- Relocation of commercial area and facilitation of appropriate land-use to realize better accessibility for trucks,
- Promotion of trade among the Arab countries,
- Enhancement of financial support to private companies by government,
- Provision of necessary supports for small companies,
- Improvement of laws and regulations for shipper companies,
- Development of more free zone areas,
- To organize a company cooperation to examine efficient transport system and cargo's mobility,
- Further promotion for export industry,
- Reduction of fuel cost,
- Reduction of shipping cost, and
- Speeding up e-government project to facilitate public services.

(5) Others

- Update company's location map,
- Professional training for government officers, and
- Reduction of bank interest for small company and agricultural industry.

2.2 Results of Interview Survey of Private Firms and Public Organizations in Logistics

2.2.1 Sea Transport

Main features obtained from the interview with sea transport (shipping) companies are described below:

- There are 21 shipping companies which actually operate ships in Egypt.
- 60% of Egyptian ships are over 30 years old.
- Most ships are less than 10,000 DWT.
- Only several Egyptian ships circulating around the Egyptian Ports are employed for container transport and also acting as feeder vessels.
- There are a few Egyptian shipping companies which provide the shipping route to EU like the Adrian Sea or the Eastern Mediterranean Sea.

2.2.2 Stevedoring

For stevedoring, major five stevedoring companies were selected in Egypt. Two companies are located in Alexandria, while three companies are located in Port Said, Damietta and Suez.

In terms of cargo handling, three companies handled containers in Alexandria, Port Said and Damietta. The remaining two companies dealt with dry bulk, general cargo and vehicle. Except for Suez, each handling volume gradually increases from 2001 to 2005.

2.2.3 Warehouse

Warehouse companies are not well-known business in Egypt, which was confirmed and discussed in the meetings with the Egyptian International Freight Forwarding Association (EIFFA). In the interview survey, major two warehouse companies were selected. As a result, "General Warehouse of Egypt" and "Egyptian Supply and Marine Works Company" own 11 and 10 warehouses, respectively. The largest warehouse was located in El Nubariya (73900m^2) owned by Egyptian Warehouse General Company. Other warehouses are located in Alexandria, Dekheila, Suez, Adabiya and so on. It is notable that 88% of all handling volumes by two companies dealt with Alexandria and Dekheila in 2005.

The companies have future plans including the expansion of existing warehouses and development of new handling facilities in Alexandria and Suez.

It is clear that the potential of warehouse development relies on the demand side in the last couple of years. Particularly, textile and garment industries in Qualified Industrial Zones (QIZ) are expected to develop advanced warehouses which can be stored and checked for quality control.

2.2.4 Inland Waterway Transport

Through the interview with three companies including General Nile Company for inland water transport, Sugar Company and Egyptian Company for maritime works, their operating conditions were checked. Although all companies transported dry bulk, liquid bulk and general cargo, they did not transport container. Most of the barges were built more than 30

years ago.

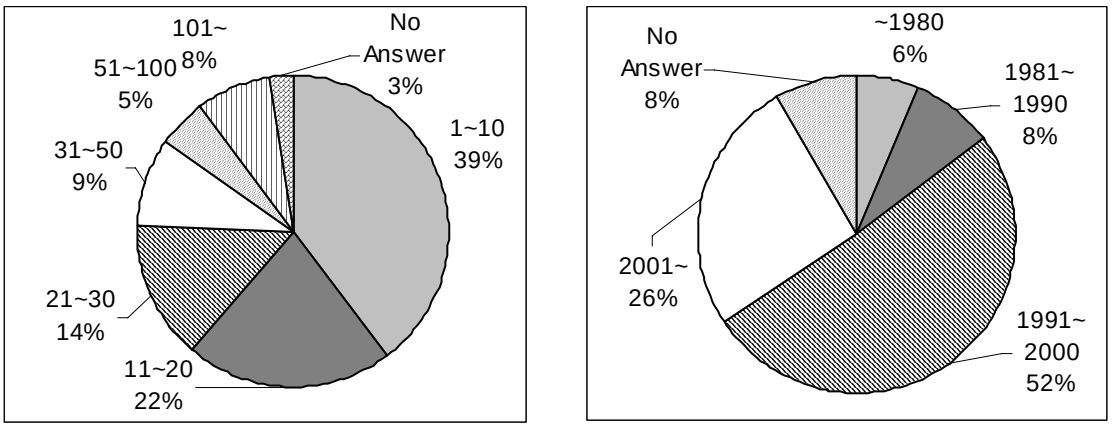
Sugar Company mainly dealt with liquid bulk, of which handling volume increases in the last five years. However, the handling volumes of other two companies were on a declining trend.

2.2.5 Freight Forwarder

(1) General Features

More than half of the surveyed companies (199 companies) have 20 employees or less. The result indicated that small scale companies have dominant share.

52% of the surveyed companies were established between 1991 and 2000, followed by between 2001 and 2006 (26%) and between 1981 and 1990 (8%). After the establishment of EIFFA in 1990, 78% of the surveyed companies have established. Freight forwarding is a relatively new business.



Number of Employees　　Year of Establishment

Figure A2.2.1　General Features

(2) Freight related Facilities

As illustrated in Figure A2.2.2, ownership of warehouse accounts for 61%. Most of the surveyed companies do not have a truck terminal as the share of those with truck terminal stands at 9%. In terms of container terminal, the share of the surveyed companies that have container terminal is only 2%.

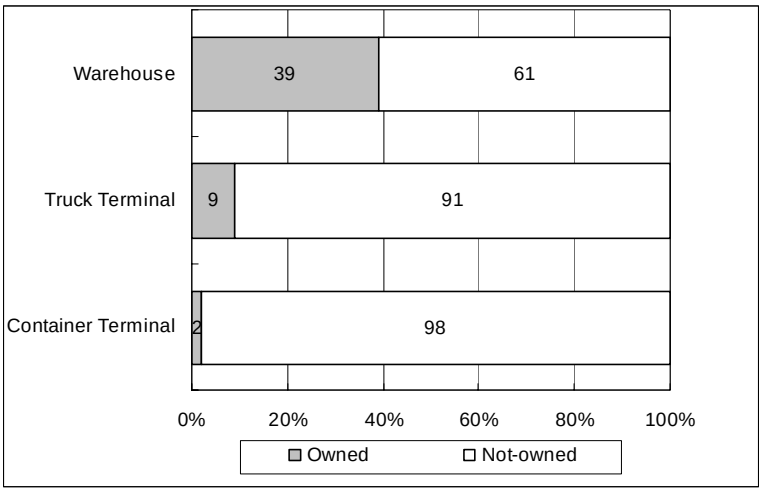
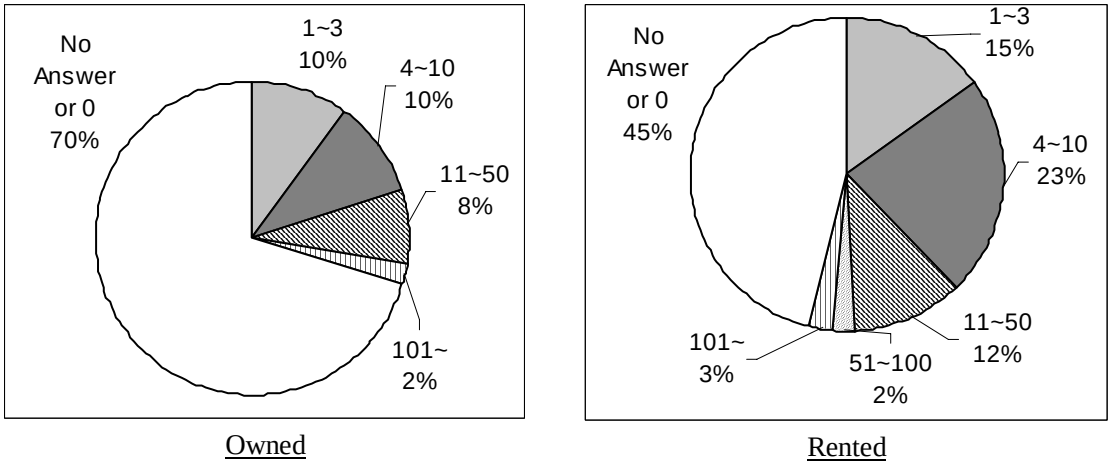


Figure A2.2.2 Ownership of Each Facility

(3) Truck Operation

As illustrated in Figure A2.2.3, 70% of the surveyed companies did not own their trucks, while more than half of them rented the trucks for the business activities. This implies that the surveyed companies outsourced the trucks from trucking operators.



Owned Rented

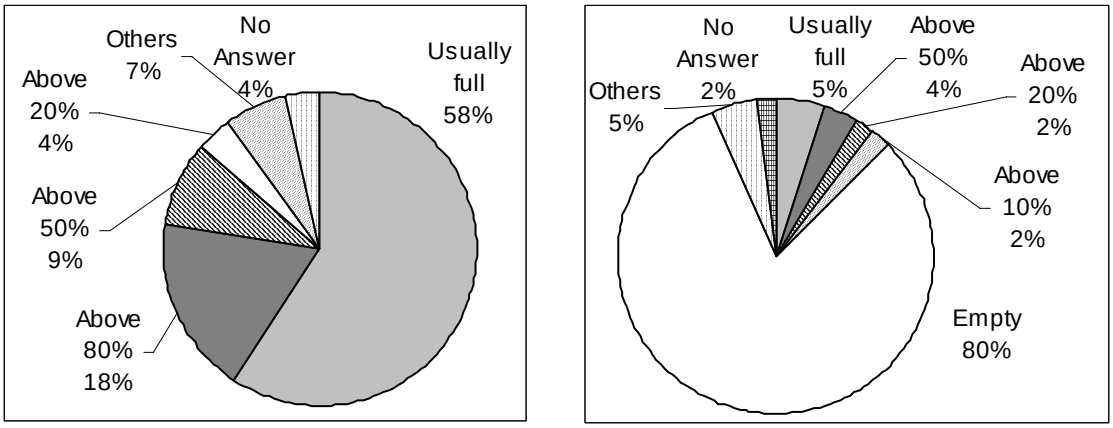
Figure A2.2.3 Number of Owned and Rented Trucks

It is interesting to note that more than half of the trucks leave with full capacity in order to meet customer demands, while 80% of them are without load on the return trip, as illustrated in Figure A2.2.4.

Since there are cooperative trucking operators organized within each governorate, cooperative delivery service shall be promoted in cooperation with freight forwarders and shippers as one of countermeasures to reduce the empty truck operation. To enhance the service, it is necessary to build logistics centers which would support an efficient truck operation by distributing by large and small goods.

In the United States, Wal-Mart which is an American corporation and the world's largest retailer directly stocks from manufacturing companies without buying from wholesale companies and manages the truck operation by itself. After the trucks delivered goods to

the stores, the trucks receive the goods from the manufacturing companies on the return trip. As the result, Wal-Mart reduces a number of the empty trucks.



Before Leaving　　Return Trip

Figure A2.2.4　Truck Loading Condition

(4) ICT Application

The most common Information and Communication Technology (ICT) application used by the surveyed companies is internet at 80%. The other applications are mobile data communication, and e-commerce (Table A2.2.1). Some ICT applications are difficult to apply for the freight forwarders, because the use of Ultra High Frequency (UHF) and General Packet Radio Service (GPRS) is prohibited in Egypt.

Table A2.2.1　Used ICT Application

ICT Application	%
Internet	80%
Mobile Data Communication	57%
E-commerce	14%
Electronic Order System (EOS)	4%
Freight and Fleet Management System	4%
Electronic Data Interchange (EDI)	2%
Automatic Picking System	2%
Bar Coding and Scanning	2%
Data Warehouse	2%
On-board Data Recorder	2%
Radio Frequency Identification (RDI)	2%
In-vehicle Sensor	1%
Conveyor Belt	1%
Container & Equipment Control System	1%
Container Storage Planning System	1%
Global Position Systems (GPS)	0%
Geography Information System (GIS)	0%
Extensive Mark-up language (XML)	0%

(5) Freight Forwarder's Future Plan

- Building of container terminals/warehouses,
- To employ more staffs/labors,
- Buying trucks and cranes,
- Installation of cargo tracing system,
- To facilitate cooperative delivery of carriers,
- Establishment of new branches all over the world,
- Facilitation of ICT Application, and
- Expansion of business field.

(6) Freight Forwarder's Opinion

a) Transport

- Construction of railway station to and from the industrial zone,
- Improvement of road network,
- Enhancement of traffic management,
- Permission to enter trucks inside city area in the daytime, and
- To enforce specified routes for trucks.

b) Infrastructure Related Logistics

- Building of free zone in the new cities, and
- Development of logistics center.

c) Customs

- Facilitation of custom clearance by using latest electronic equipments, and
- Increase of working hours in custom offices.

d) Policy/Strategy/Laws

- More cooperation among different governmental parties, freight forwarders and logistics providers,
- Unification of all port fees, and
- Decrease of fuel oil cost.

2.3 Result of Internal Logistics Survey

2.3.1 Material Handling Equipment

As illustrated in Figure A2.3.1, most of the surveyed companies were utilizing forklift accounting for 78%. Pallet and material storage system are utilized by about 40% of surveyed companies. Other equipments are utilized by some companies at present. The reasons which they do not have the equipment are "low productivity", "expensive equipments", or "not suitable for existing system".

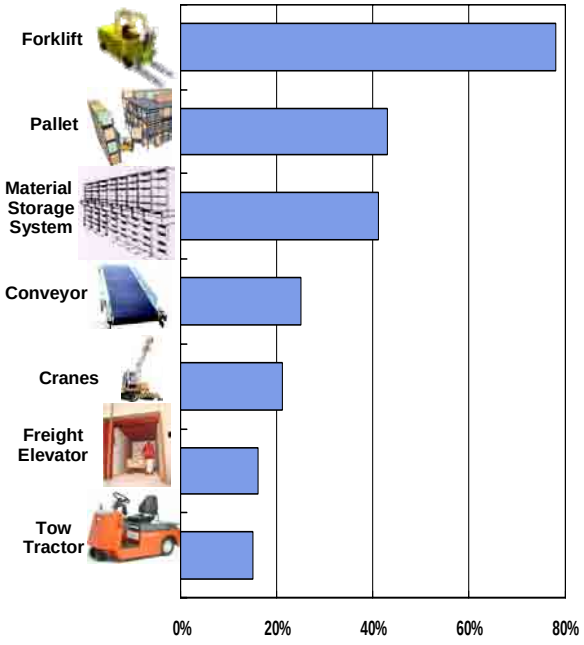
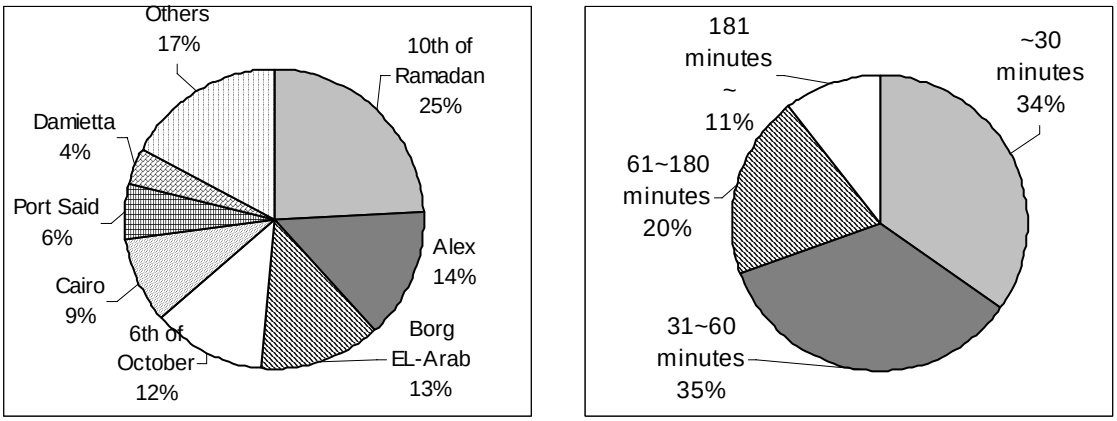


Figure A2.3.1 Available Material Handling Equipment

2.3.2 Location of Facility

87% of facilities (plant, manufacturing center or warehouse) are located inside the city. For the particular location of facilities, there are 25% in the 10th of Ramadan, 14% in Alexandria, 13% in Borg El-Arab, and 12% in the 6th of October. The rest of facilities are located in Damietta, Port Said and Cairo as shown in Figure A2.3.2. In terms of travel time from port to the facilities, 69% of the surveyed companies are reachable within an hour and 20% of them require 61 to 180 minutes. The remaining 11% is reachable by 181 minutes or more.



Particular Location　　Travel Time to Port

Figure A2.3.2 Feature of Facility Location

To select location of the facilities, the most important consideration was cheap labors and lands based on the evaluation score shown in Table A2.3.1. This is followed by availability of skilled labors and proximity to consumer market. These three factors are ranked higher in the important factors to build new facilities in the future. It could be proved by the fact that

shortage of skilled labors was the highest risk facing the surveyed companies since their operation.

Table A2.3.1 Evaluation Score to Select Location of Facility

Factor	1st	2nd	3rd	4th	5th	6th	7th	8th	Total	%	Rank
Cheap labors and lands	180	224	140	54	20	40	9	6	673	15.8%	1
Availability of skilled labors	234	96	91	90	85	28	21	0	645	15.2%	2
Close to consumer market	135	168	133	66	35	52	18	10	617	14.5%	3
Superior transportation	36	48	140	126	100	52	21	12	535	12.6%	4
Close to raw materials	72	96	49	90	90	64	39	16	516	12.2%	5
Favorable tax exemption	81	56	35	90	115	52	45	20	494	11.6%	6
Superior information and communication technology	27	40	42	42	25	76	90	44	386	9.1%	7
Favorable political environment (stable)	99	40	42	18	20	24	48	92	383	9.0%	8
								Total	4,249	100%	

Note: 1st priority = Number of companies multiplied by 8, 2nd priority = Number of companies multiplied by 7, 3rd priority = Number of companies multiplied by 6, 4th priority = Number of companies multiplied by 5, 5th priority = Number of companies multiplied by 4, 6th priority = Number of companies multiplied by 3, 7th priority = Number of companies multiplied by 2, 8th priority = Number of companies multiplied by 1.

2.3.3 Human Resource Development

More than half of the surveyed companies have a training program for their staff. The training programs cover the following courses:

- Computers and computing works
- Accounting
- General administration
- Training for new machineries
- Warehouse management
- Others

Concerning the frequency of training, the surveyed companies having a yearly training constituting 44%, followed by depending on needs (24%) as shown in Table A2.3.2.

Table A2.3.2 Frequency of Training

Item	Percentage
Once in every 5 months	22%
Once in every year	44%
Once in every 2 years	10%
Depending on needs	24%
Total	100%

20% of the surveyed companies conduct the training between 5 and 7 days, followed by more than a week (16%) as shown in Table A2.3.3.

Table A2.3.3 Duration of Training

Item	Percentage
1 to 2 days	5%
3 to 4 days	12%
5 to 1 week	20%
More than a week	16%
Others	4%
No answer	42%
Total	100%

Note: Others: according to the need, 1 month, more than 2 months, etc.

2.3.4 ICT Application

As illustrated in Figure A2.3.3, the most common ICT used are internet and mobile data communication. Most companies using ICT in their operation hope to have easy and quick communication with customers as shown in Figure A2.3.4. This function can be fulfilled by internet when they can easily advertise their services. The other objectives of using ICT are to improve quality and to increase their revenue.

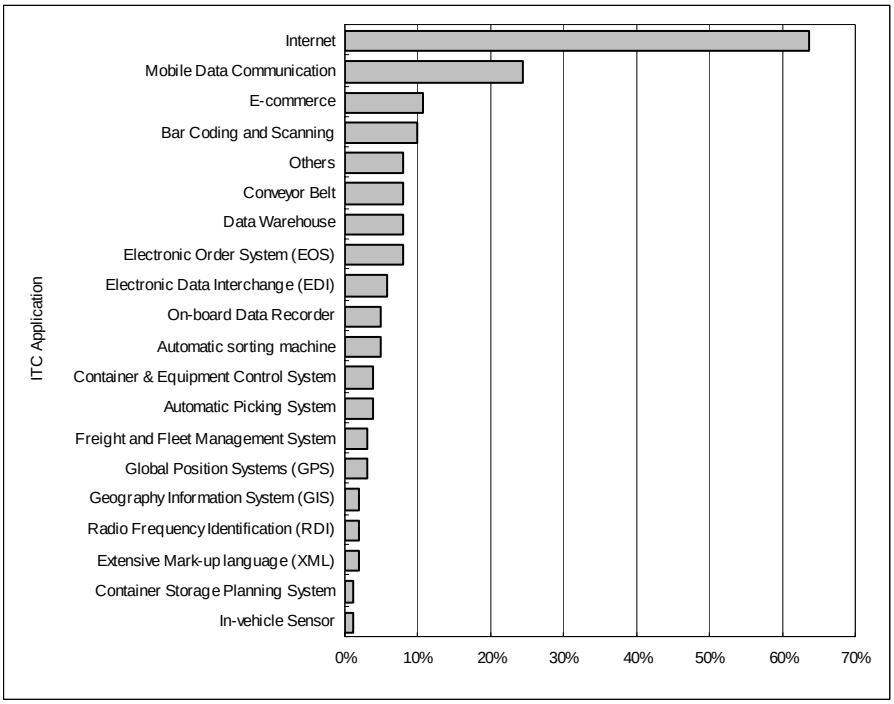


Figure A2.3.3 Used ICT Application

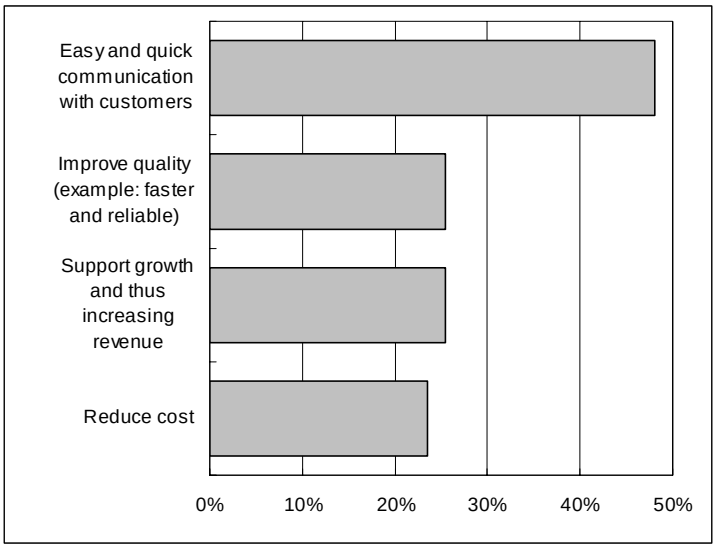


Figure A2.3.4 Objectives of Using ICT Application

ICT application was utilized for warehouse management, purchasing/procurement and material handling in the process of goods production as shown in Figure A2.3.5.

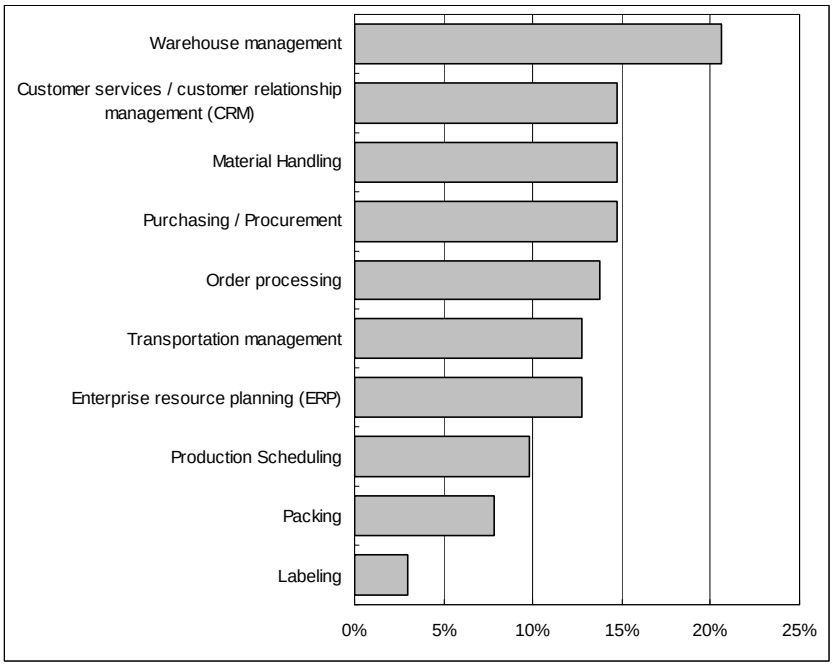


Figure A2.3.5 Coverage of ICT Application

The notable impact by using ICT application is that ICT provides faster and reliable service to customers, as shown in Figure A2.3.6. This is followed by produce business and thus increases revenues. It seems that new business opportunity is opened-up by using the internet.

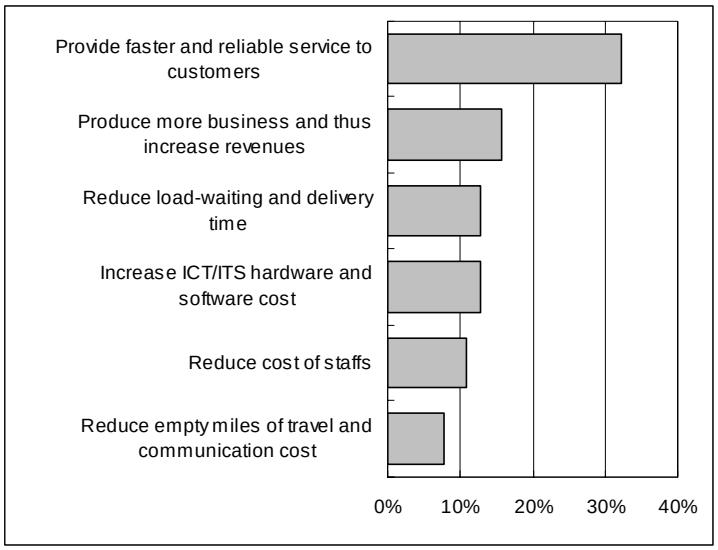


Figure A2.3.6 Impact of ICT

The surveyed companies intend to utilize more ICT application in the field of warehouse management, enterprise resource planning in the future as illustrated in Figure A2.3.7.

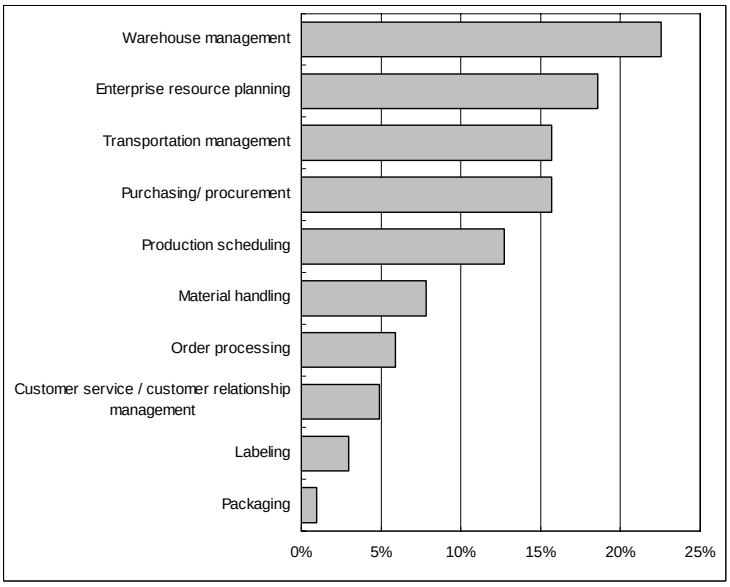


Figure A2.3.7 Expected Future ICT Application

The surveyed companies expect to provide training course and to provide new technology information (Figure A2.3.8).

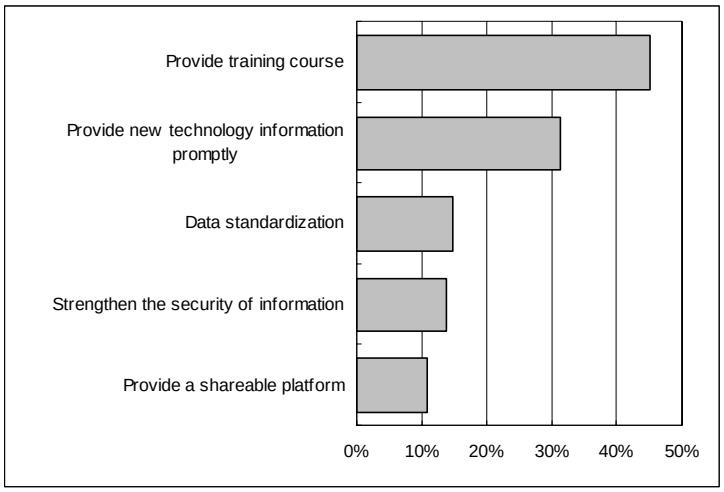


Figure A2.3.8 Necessary Government Support

3. Survey Form

3.1 Shipper Survey

Company Code	
Survey Date	
Surveyor Name	

Shipper Interview Survey

The purpose of this survey is to obtain detailed logistics and freight related information of your activity in order to understand the present logistics condition in Egypt. The data will be analyzed and used as basis to formulate future strategic logistics development policies by the Ministry of Transport. We appreciate your cooperation.

PART I. GENERAL INFORMATION

Q1. Name of Company: _____

Q2. Address: _____

Q3. Email address: _____

Q4. Position: _____

Q5. Total no. of employees (all types) in this office _____ in all this governorate_____ in entire Egypt_____

Q6. Encircle type of services/business
- a. Agriculture, forestry and fishery
- b. Mining, quarries and petroleum
- c. Construction
- d. Light manufacturing (food, beverage, tobacco, garment, pulp, paper, spinning, wood and leather)
- e. Chemical manufacturing
- f. Iron, steel and metal manufacturing
- g. Machinery manufacturing
- h. Electricity manufacturing
- i. Others, specify _____

Q7. Type of company (a) private (b) public (state-owned)(c) others, specify _____

Q8. Operation hours: _____:_____ to _____:_____

Q9. Year established: _____

Q10. Total land area: _____

Q11. Total floor area: _____

Q12. Capital amount _____

Q13. Annual turnover: _____

Q14. Owned vehicles:

Please specify the number of vehicle owned by type.

Type	Car/Jeep	Bus	2-axle truck	3-axle truck	4 and more axles truck	Tractor Head Chassis
No.						

Q15. Where do you get your raw materials?

a. All outside the country

b. All inside the country

c. Some from inside the country, some from outside the country

Q16. Is your warehouse/manufacturing center inside the city?

a. Yes b. No, outside the city

Q17. How many warehouses/manufacturing centers do you have? _____

Q18. Warehouse characteristics.

Warehouse No.	Floor area (m^2)	Land area (m^2)	Location	Inside city or outside city	Travel time to Port*	Transport Mode	Port name
1							
2							
3							

PART II: PROCEDURE PRIOR TO SHIPMENT OF GOODS (CUSTOMS CLEARANCE)

Q19. How many signatures are needed to clear your product for export at customs office? _____

Q20. How long does it take to get all these signatures? _____ days

Q21. Do you use internet or other information/communication on customs clearance matters?

a. Yes

b. No (If no, tell us why) _____

Q22. Who arrange all the necessary documents to clear the shipment for export?

a. Do all by ourselves

b. Do by the carrier

c. By third party other than carrier

d. Others, specify_____

Q23. How many documents are needed to clear your product for export at customs office? _____

Q24. In your opinion, just how many documents are really needed? _____

Q25. Please check all the name of documents needed for clearance of exported goods at customs office.

Name of document	Check if required	Degree of difficulty to obtain (check how difficult to obtain)		
		Very difficult	Difficult	Not difficult
1. Bill of lading				
2. Certificate of origin				
3. Commercial invoice				
4. Customs export declaration form				
5. Packing list				
6. Pre-shipment inspection clean report of findings				
7. Shipping note				
8. Technical standard/health certificate				
9. Others, specify ( )				
10. Others, specify ( )				
11. Others, specify ( )				
12. Others, specify ( )				

Q26. How do you comply with these requirements?

a. Do all by ourselves

b. Do by carrier

c. By third party other than carrier

d. Others, specify_____

Q27. How many days it takes before your shipment can be cleared at the custom and ready for shipment?

_____

Q28. In total, how many days it takes for your goods (the moment it is released from warehouse) before it can be loaded to ship?_____

PART III: PROCEDURE PRIOR TO ARRIVAL OF GOODS (CUSTOMS CLEARANCE)

Q29. How many signatures are needed to clear your imported items at customs office? _____

Q30. How long does it take to get all these signatures? _____ days

Q31. How do you comply with these requirements?

a. Do all by ourselves
b. Do by the carrier
c. By third party other than carrier
d. Others, specify_____

Q32. How many documents are needed to clear your imported items at customs office? _____

Q33. In your opinion, just how many documents are really needed? _____

Q34. Please check all the name of documents needed for clearance of imported goods at customs office.

Name of document	Check if required	Degree of difficulty to obtain (check how difficult to obtain)		
		Very difficult	Difficult	Not difficult
1. Bill of lading				
2. Cargo manifest				
3. Certificate of origin				
4. Commercial invoice				
5. Customs import declaration form				
6. Packing list				
7. Ship arrival notice				
8. Terminal charges receipt				
9. Others, specify ( )				
10. Others, specify ( )				
11. Others, specify ( )				
12. Others, specify ( )				

Q35. How do you comply with these requirements?

a. Do all by ourselves
b. Do by carrier
c. By third party other than carrier
d. Others, specify_____

Q36. How many days it takes before your goods can be cleared at the customs? _____

Q37. How many days it takes before your goods can exit at the port after the arrival of ship? _____

Q38. How many days your goods will be arrived to your warehouse after it is unloaded from the ship? _____

PART IV: VARIATION OF TRANSPORT MODES AND MODAL SHIFT

Q39. Check all the transport modes that can be used to transport your goods (raw materials) (from warehouse to port or port to warehouse or warehouse to city).

Mode	Check		
	Warehouse to port	Port to warehouse	Warehouse to city
1. Truck			
2. Inland water transport			
3. Railway			
4. Others, specify ( )			

Q40. Check the transport modes you normally use to transport your product (from warehouse to port or port to warehouse).

Mode	Check		
	Warehouse to port	Port to warehouse	Warehouse to city
1. Truck			
2. Inland water transport			
3. Railway			
4. Others, specify ( )			

Q41. Indicate the reasons for not using railway/train (may choose more than one).

a. Expensive than trucks
b. Frequency rate is very low (few trains arrived)
c. Troublesome to transfer goods to another mode
d. Travel time is higher than trucks
e. No benefits of using train
f. Level of service is very poor that might damage my goods
g. Safety is not guaranteed (high accident risk and lost of goods)
h. Others, specify_____

Q42. Indicate the reasons for not using inland water transport (may choose more than one).

a. Expensive than trucks
b. Frequency rate is very low (few trains arrived)
c. Troublesome to transfer goods to another mode
d. Travel time is higher than trucks
e. No benefits of using train
f. Level of service is very poor that might damage my goods
g. Safety is not guaranteed (high accident risk and lost of goods)
h. Others, specify_____

Q43. If improvement is made with railway/train are you going to use it to transport your goods?

a. Yes, very likely
b. Yes, most likely
c. I have no plan to change from my current transport mode
d. Others, specify _____

Q44. If improvement is made with inland water transport, are you going to use it to transport your goods?

a. Yes, very likely
b. Yes, most likely
c. I have no plan to change from my current transport mode
d. Others, specify _____

Q45. Rate how strongly you suggest to improve the following measures

Measures	Strongly suggest	Suggested	Good enough	No need
Train related				
a. Improvement/increase of rail network				
b. Improvement of safety measures				
c. Increase of arrival/departure frequency				
d. Increase of capacity				
e. Improvement of handling facilities				
f. Reduction of charging fee				
River transport related				
g. Improvement of safety measures				
h. Increase of arrival/departure frequency				
i. Increase of capacity				
j. Improvement of handling facilities				
k. Reduction of charging fee				

PART V: OTHERS

Q46. At present, how do you deal with physical distribution functions on your business?

Function	By ourselves	Partly outsourcing	Completely outsourcing
a. Transport			
b. Pick-up			
c. Delivery			
d. Storage and Deposit			
e. Assemble (handling, processing & assembling)			
f. Packaging and wrap			
g. Loading and unloading			
h. Information and commercial trade (quality & quantity control, placing and receiving order)			

Q47. Which of the following strategies is currently practiced by your company?

Strategies	Check	
	Currently practice	Plan to implement in future
a. Supply chain management*		
b. Cut down on cost by compression of stock (reduce inventory)		
c. Consolidation of delivery		
d. Cooperation with other companies like consolidation of goods		
e. Application of just in-time delivery		
f. Application of measure for assembling in factory, warehouse or distribution center		
g. Application of information technology on physical distribution (example, use of internet to trace truck cargo)		

** Supply chain management aims to: (1) reduce inventory, (2) increase the transaction speed by exchanging data in real-time, and (3) increase sales by implementing customer requirements more efficiently*

Q48. Do you have your own logistics facilities (example: truck terminal, container terminal)? If yes, write their names and sizes.

Name and number	Location (address)	Floor area (m^2)	Land area (m^2)
Truck terminal 1			
Truck terminal 2			
Container terminal 1			
Container terminal 2			

Q49. What is the share of each cost to your total physical distribution cost?

Physical Distribution cost	Percentage
a. Transportation cost	
b. Loading/unloading cost (including parking cost)	
c. Storage cost	
c. Packaging cost	
d. Others, specify ( )	
Total	100 %

Q50. Which of the following is the most important that should be immediately addressed? Rank them, 1 being the most important.

Measure	Rank
a. Improvement of road network	
b. Improvement of traffic management	
c. Increase of container terminal / port capacity	
d. Improvement of checking/verification system at port to make it fast	
e. Simplification of customs procedure	

Q51. Please describe your future plan to improve your business if you have (example, building of new warehouse, buying of trucks, etc)

Q52. Do you have any comments/suggestions to the government to improve the facilitation of business related activities?

ANNUAL COMMODITY SURVEY (2005/2006)

JICA - TPA

1. Please fill in the annual situation (2005/2006) of input (shipping in) of the commodity.

	seq.	Commodity		Shipment weight	By which main transport mode, was this commodity delivered?				
		Description	code	(ton)	road	rail	inland waterway	air	total
INPUT	0	Sugarcane		10,000	70	5	25		100%
	1								100%
	2								100%
	3								100%
	4								100%
	5								100%

Process

2. Please fill in the annual situation (2005/2006) of output (shipping out) of the commodity.

	seq.	Commodity		Shipment weight	By which main transport mode, was this commodity delivered?				
		Description	code	(ton)	road	rail	inland waterway	air	total
OUTPUT	0	honeydew		2,000	95		5		100%
	1								100%
	2								100%
	3								100%
	4								100%
	5								100%

3. Please fill in the percentage from where raw materials are shipped in.

From		1 Cairo	2 Alexandria	3 Port Said	4 Suez	5 Damietta	6 Dakahlia	7 Sharkia	8 Kalyoubia	9 Kafr-El-Sheik	10 Gharbia	11 Menoufia	12 Behera	13 Ismailia	14 Giza	15 Beni-Suef	16 Fayoum	17 Menia	18 Asyout	19 Suhag	20 Qena	21 Aswan	22 Luxor	23 Red Sea	24 ElWdi ElGidid	25 Matrouh	26 North Sinai	27 South Sinai	28 (Overseas)										Total %
																												Alexandria P	Damietta port	Port Said port	Suez port	Sofna port	Ohers ports	Cairo airport	Sudan border	Libya border	Israel border	Others	
Input	Road																																					100
	Rail																																					100
	Inland W.																																					100
	Air																																					100

4. Please fill in the percentage to where the products are shipped out.

To		1 Cairo	2 Alexandria	3 Port Said	4 Suez	5 Damietta	6 Dakahlia	7 Sharkia	8 Kalyoubia	9 Kafr-El-Sheik	10 Gharbia	11 Menoufia	12 Behera	13 Ismailia	14 Giza	15 Beni-Suef	16 Fayoum	17 Menia	18 Asyout	19 Suhag	20 Qena	21 Aswan	22 Luxor	23 Red Sea	24 ElWdi ElGidid	25 Matrouh	26 North Sinai	27 South Sinai	28 (Overseas)										Total %
																												Alexandria P	Damietta port	Port Said port	Suez port	Sofna port	Ohers ports	Cairo airport	Sudan border	Libya border	Israel border	Others	
Output	Road																																					100
	Rail																																					100
	Inland W.																																					100
	Air																																					100

5. Please fill in the percentage by month.

Month	Jul-2005	Aug	Sep	Oct	Nov	Dec	Jan-2006	Feb	Mar	Apr	May	Jun	Total
Input													100%
Output													100%

NOTE:
Input: Transport of raw materials to factory/manufacture/plant, etc
Output: Transport of processed product from factory/manufacture/plant, etc

JICA - TPA

3 DAYS (JAN) COMMODITY FLOW SURVEY

Total number of shipment for 3 days		Total days of shipment in November 2006	days

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		P	Q	R		S	T	U		V	W	X	Y	Z	AA	AB	AC
Line No.	Shipment date		Commodity		Shipment value (excluding shipping cost) **in L.E**	Shipment weight **in kilograms**	Commodity		Type of cargo	Origin				Transport route													Destination				
	Month	day	code	description			Quantity	Uniit		Code	Address/place City/ name of ports	governrate	Consignor	Mode of transport		Transit 1 code	Transit 1 place	Mode of transport		Transit 2 code	Transit 2 place	Mode of transport		Transit 3 code	Transit 3 place	code	Address/place City/name of ports	governrate	Consignee	Shipping time **in hour**	Shipping cost **in L.E**
0	11	27	0	honeydew	2,000,000	11,000	10,000	LTR	0	1	AAA city	Menufera	Sugar refinery	5	→	0			→				→			3	Alexandria port		Italy	3.5	1,500
00	11	28	2	limestone	5,000,000	100,000			0	0	BBB city	Aswan	Mining operator	3	→	3	Asuwan port	9	→	3	Cairo port	3	→			1	Cairo xxxxxxx		Cement factory	36.0	10,000
1	11														→				→				→								
2	11														→				→				→								
3	11														→				→				→								
4	11														→				→				→								
5	11														→				→				→								
6	11														→				→				→								
7	11														→				→				→								
8	11														→				→				→								
9	11														→				→				→								
10	11														→				→				→								
11	11														→				→				→								
12	11														→				→				→								
13	11														→				→				→								
14	11														→				→				→								
15	11														→				→				→								

<D> Commodity (SITC) code	
0	FOOD AND LIVE ANIMALS
1	BEVERAGES AND TOBACCO
2	CRUDE MATERIALS, INEDIBLE, EXCEPT FUELS
3	MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS
4	ANIMAL AND VEGETABLE OILS, FATS AND WAXES
5	CHEMICALS AND RELATED PRODUCTS, N.E.S.
6	MANUFACTURED GOODS CLASSIFIED CHIEFLY BY MATERIAL
7	MACHINERY AND TRANSPORT EQUIPMENT
8	MISCELLANEOUS MANUFACTURED ARTICLES
9	COMMODITIES AND TRANSACTIONS NOT CLASSIFIED ELSEWHERE IN THE SITC

<I> Unit type	
Sq. meter	m2
Cubic mete	m3
Litter	LTR
pieces	PCS
Others	

<J> Type of cargo	
0	Bulk
1	20ft container
2	40ft container
3	45ft container
4	Others

<K> Code of Origin	
0	Production area
1	Factory
2	Warehouse
3	Port
4	Airport
5	Others

<O,R,U> Mode of transport	
1	Van (L.T.1 ton)
2	2 axis truck
3	3 axis truck
4	Trailer truck
5	Tank
6	Rail (container)
7	Rail (bulk, others)
8	Inland w.way (container)
9	Inland w.way (bulk,etc)
10	Marine(container)
11	Marine(bulk,others)
12	Air (container)
13	Others

<P,S,V> Code of transit place	
0	Cargo transported to destination by the mode which leave the Origin.
1	Truck terminal
2	Railway station
3	Inland waterway station
4	Port
5	Inland Depot
6	Others

<Q,T,W> Place
Please describe the point name concretely.

<X> Code of destination	
0	Prodcution area
1	Factory
2	Warehouse
3	Port
4	Airport
5	Others

<AA> Consignee
Please describe the company name and/or exporting country.

SEA TRANSPORT SURVEY

The purpose of this survey is to obtain detailed logistics and freight related information of your activity in order to understand the present logistics condition of Sea Transport Sector in Egypt. The data will be analyzed and used as basis to formulate future strategic logistics development policies by the Ministry of Transport. We appreciate your cooperation

Company Code	
Survey Date	
Surveyor Name	

Q1 Name: _____

Q2 Address: _____

Q3 Name of respondent: _____

Q4 Title/position of respondent: _____

Q5 Tel: _____

Q6 Fax: _____

Q7 e-mail: _____

Q8 Type of company: □1 private □2 public □3 state-owned enterprise

Q9 Number of Employee: _____ (in the office), _____ (in the field)

Q10 Cargo Volume

Please specify the cargo handling volume for the latest five (5) years by commodity.

	Container (TEU)	Dry Bulk (ton)	Liquid Bulk (ton)	General Cargo (ton)	Vehicle (No.)
2001					
2002					
2003					
2004					
2005					

Q11 Owned Vessels

Please specify the dimensions of vessels owned.

Name of vessel	Type of vessel	Built (year)	DWT (ton)	LOA (m)	Breadth (width) (m)	Draft (m)	Commodity	Present Service Line		Existence of Ship Gear (crane equipped on the deck)
								Type of service	Calling Ports	
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No
								Liner or Tramp		Yes or No

Q12 Future Plan

Please describe your future plan related to logistics to improve your business if you have (example, purchase of new vessels).

Q13 Comments/Suggestions to the Government

Do you have comments/requests/suggestions for the government? Please write it here.

Note: DWT - Deadweight Tonnage
LOA – Length Overall

STEVEDORING SURVEY

The purpose of this survey is to obtain detailed logistics and freight related information of your activity in order to understand the present logistics condition of Stevedoring Sector in Egypt. The data will be analyzed and used as basis to formulate future strategic logistics development policies by the Ministry of Transport. We appreciate your cooperation.

Q1 Name: _____

Q2 Address: _____

Q3 Name of respondent: _____

Q4 Title/position of respondent: _____

Q5 Tel: _____

Q6 Fax: _____

Q7 e-mail: _____

Q8 Type of company: □1.private □2.public □3. state-owned enterprise
Q9 Number of Employee: _____ (in office), _____ (the laborers)
Q10 Cargo Volume
Please specify the cargo handling volume for the latest five (5) years by commodity.

	Container (TEU)	Dry Bulk (ton)	Liquid Bulk (ton)	General Cargo (ton)	Vehicle (No.)
2001					
2002					
2003					
2004					
2005					

Q11 Future Plan

Please describe the future plan to improve the logistics, for example, purchase of vehicles, if you have.

Q12 Your Claim/Demand to the Government

Please describe your claim/demand to the Government, if you have.

WAREHOUSE SURVEY

The purpose of this survey is to obtain detailed logistics and freight related information of your activity in order to understand the present logistics condition of warehousing industry in Egypt. The data will be analyzed and used as basis to formulate future strategic logistics development policies by the Ministry of Transport. We appreciate your cooperation

Q1 Name: _____

Q2 Address: _____

Q3 Name of respondent: _____

Q4 Title/position of respondent: _____

Q5 Tel: _____

Q6 Fax: _____

Q7 e-mail: _____

Q8 Type of company: □1.private □2.public □3. others, specify _____

Q9 Number of Employee: _____ (in office), _____ (the laborers)

Q10 Number of Warehouse

Please specify the number of warehouses by port.

	Alexandria (incl. Dekhila)	Damietta	Port Said (West)	Port Said (East)	Suez	Sokhna
No.						

Q11 Area of each Warehouse

Please specify the area of each warehouse.

Warehouse location	Area (m^2)	Floor	Number of Loading Docks	Number of Forklifts
(sample) Alex-1	5000	flat or raised	6	10

Note: Alex – Alexandria, Da – Damietta, PW – Port Said West, PE – Port Said East, Su – Suez, So - Sokhna

Q12 Cargo Volume in the Warehouse

Please specify the cargo volume in each port for the last 5 years.

Unit: ton

	Alexandria (incl. Dekhila)	Damietta	Port Said (West)	Port Said (East)	Suez	Sokhna
2001						
2002						
2003						
2004						
2005						

Q13 Future Plan

Please describe your future plan to improve your logistics operation if you have. For example, building of additional warehouses

Q14 Comments/Suggestions to the Government

If you have comments/suggestions to the Government, describe it here.

INLAND WATERWAY TRANSPORT SURVEY

The purpose of this survey is to obtain detailed logistics and freight related information of your activity in order to understand the present logistics condition of water Transport Sector in Egypt. The data will be analyzed and used as basis to formulate future strategic logistics development policies by the Ministry of Transport. We appreciate your cooperation.

Company Code	
Survey Date	
Surveyor Name	

Q1 Name: _____

Q2 Address: _____

Q3 Name of respondent: _____

Q4 Title/position of respondent: _____

Q5 Tel: _____

Q6 Fax: _____

Q7 e-mail: _____

Q8 Type of company □1.private □2.public □3. state-owned enterprise

Q9 Number of Employee: _____ (in the office), _____ (in the field)

Q10 Cargo Volume

Please specify the cargo handling volume for the latest five (5) years by commodity.

	Container		Dry Bulk		Liquid Bulk		General Cargo		Vehicle	
	(TEU)	(TEU km)	(ton)	(ton-km)	(ton)	(ton km)	(ton)	(ton-km)	(No.)	(Vehicle- km)
2001										
2002										
2003										
2004										
2005										

Q11 Owned Vessels:

Please specify the dimensions of vessels owned.

Name of barge	Built (year)	Self -propelled	How much is Horse power	No. of crew members	Ship's height	Floating Capacity (ton)	Length (m)	Width (m)	Draft (m)	Commodity	Present Service Line	
											Type of service	Calling Ports
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	
		Yes or No									Liner or Tramp	

Q12 Future Plan

Please describe your future plan related to logistics to improve your business if you have (example, purchase of new barges).

Q13 Comments/Suggestions to the Government

Do you have comments/requests/suggestions for the government? Please write it here.

Note: TEU means Twenty-Foot Equivalent Unit

FREIGHT FORWARDER SURVEY

The purpose of this survey is to obtain detailed logistics and freight related information of your activity in order to understand the present logistics condition in Egypt. The data will be analyzed and used as basis to formulate future strategic logistics development policies by the Ministry of Transport. We appreciate your cooperation.

PART I. GENERAL INFORMATION

Q1. Name of Company: _____

Q2. Address: _____

Q3. Email address: _____

Q4. Position: _____

Q5. Year Established: _____

Q6. Total no. of employees (all types) in this office _____ all in this governorate_____ in entire Egypt_____

PART II. LOGISTICS FACILITIES AND COMMODITIES VOLUME

Q7. Please check the major logistics facilities your company possessed.

Warehouse/Storage				
Facilities	**Location (address)**	**Size (m^2)**	**Handled annually**	**Total Capacity annually**
Warehouse 1	Cairo (specific address)	4,000	5,000 ton	8,000 ton

Truck terminal				
Facilities	**Location (address)**	**Size (m^2)**	**Handled annually**	**Total Capacity annually**
Truck terminal 1	address	40,000	7,000 trucks	11,000 trucks

Container terminal				
Facilities	**Location (address)**	**Size (m^2)**	**Handled annually**	**Total Capacity annually**
Container terminal 1	address	80,000	60,000 TEU	100,000 TE
Others, specify				

Q8. Please tell us the number of staff working for every facility you have.

Facilities	**Total no. of staff**
1. Warehouse/Storage	
2. Truck terminal	
3. Container terminal	
4. Others, specify	

Q9. How many vehicles do you have for operation?

Vehicles Type	No of vehicles		If rented, how much (indicate unit)*	Total vehicles
	Owned	Rented		
1. 2-axle truck				
2. 3-axle truck				
3. 4 and more axles truck				
4. Tractor Head Chassis				

**Example: LE 3000 per truck per month*

Q10. Please tell us the characteristics of the vehicles you used for operation (both owned and rented)?

Vehicles Type	Owned Vehicles		Rented vehicles
	Year Bought	Year Model	Year Model
2-axle truck			
Truck 1			
Truck 2			
Truck 3			
Truck 4			
Truck 5			
Truck 6			
3-axle truck			
Truck 1			
Truck 2			
Truck 3			
Truck 4			
4 and more axles truck			
Truck 1			
Truck 2			
Truck 3			
Truck 4			
Tractor Head Chassis			
Tractor 1			
Tractor 2			
Tractor 3			
Tractor 4			

Q11. Please tell us the estimated volume you have delivered per month or per year (just select which is easy to answer, per month or per year).

Year	Total volume of goods delivered per month*	Total volume of goods per year*
2001		
2002		
2003		
2004		
2005		

*Indicate the unit, example (300,000 containers per year or 500 ton per year).

Q12. Please tell us the estimated total kilometer of all your vehicles per month or per year (just select which is easy to answer, per month or per year).

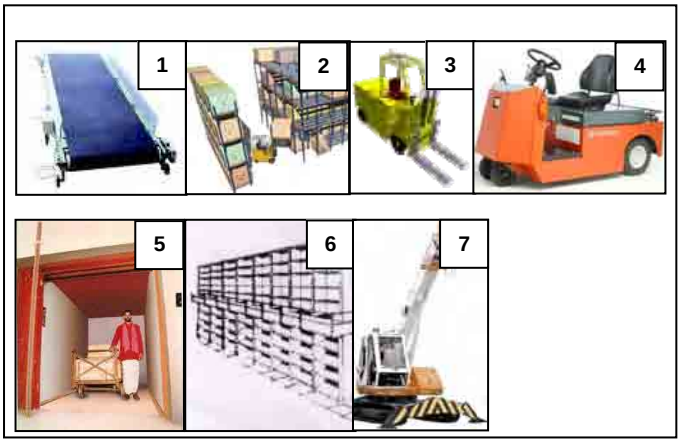
Year	Total kilometer (month)	Total kilometer (year)
2001		
2002		
2003		
2004		
2005		

Q13. What are the main commodities you have handled the most? Please indicate unit, example, 50 tons or 20,000 boxes

Commodity Type	Check	Volume	
		Per Month	Per Year
1. Food and live animals			
2. Beverages and tobacco			
3. Crude materials, inedible, except fuels			
4. Mineral fuels, lubricants and related materials			
5. Animal and vegetable oils, fats and waxes			
6. Chemicals and related products, N.E.S.			
7. Manufactured goods classified chiefly by material			
8. Machinery and transport equipment			
9. Miscellaneous manufactured articles			
10. Others			

Q14. Please check the equipment you have in facilities and indicate its number. Refer to the pictures for easy recognition of the equipment.

Material Handing Facilities	Check	Tell us how many do you have
1. Conveyor		
2. Pallet		Pls. describe size _____ mm x _____ mm _____ feet x _____ feet
3. Forklift		
4. Tow Tractor		
5. Freight Elevator		
6. Material Storage System		
7. Cranes		
8. Others, specify _____		



Q15. Please check the ITC application you are using and indicate the month and year you start using it.

ICT Application	Check	Tell us when have you started using (Month, Year)
1. Electronic Data Interchange (EDI)		
2. Extensive Mark-up language (XML)		
3. Internet		
4. E-commerce		
5. Electronic Order System (EOS)		
6. Automatic Picking System		
7. Bar Coding and Scanning		
8. Data Warehouse		
9. Global Position Systems (GPS)		
10. Radio Frequency Identification (RDI)		
11. Geography Information System (GIS)		
12. In-vehicle Sensor		
13. On-board Data Recorder		
14. Mobile Data Communication		
15. Conveyor Belt		
16. Freight and Fleet Management System		
17. Container & Equipment Control System		
18. Container Storage Planning System		
19. Others, please specify ( )		

PART III. TRANSPORT OPERATION

Q16. Do you handle customs clearance for the goods loaded on your truck? (a) Yes (b) No

Q17. Usually, what time is your first delivery and last delivery in a day?

First delivery	Last delivery

Q18. What percentage of total capacity usually your trucks depart to meet customer demands?

Scenario	Check
1. The truck is usually full before leaving	
2. above 80% full before leaving	
3. above 50% full before leaving	
4. above 20% full before leaving	
5. Others, specify	

Q19. On the return trip of your trucks, how is the situation?

Scenario	Check
1. The truck is usually full by loading other goods	
2. The truck is above 50% full	
3. The truck is above 20% full	
4. The truck is above 10% full	
5. The truck is empty	
6. Others, specify	

Q20. From where to where do you bring the main commodities? (Please fill in the number of the following coding table.)

Commodity Type	First Main OD		Second Main OD	
	Origin	Destination	Origin	Destination
1. Food and live animals				
2. Beverages and tobacco				
3. Crude materials, inedible, except fuels				
4. Mineral fuels, lubricants and related materials				
5. Animal and vegetable oils, fats and waxes				
6. Chemicals and related products, N.E.S.				
7. Manufactured goods classified chiefly by material				
8. Machinery and transport equipment				
9. Miscellaneous manufactured articles				
10. Others				

Coding Table

No.	Place
1	Cairo
2	Alexandria
3	Port Said
4	Suez
5	Damietta
6	Dakahlia
7	Sharkia
8	Kalyoubia
9	Kafr-El-Sheikh
10	Gharbia
11	Menoufia
12	Behera
13	Ismailia
14	Giza

No.	Place
15	Beni-Suef
16	Fayoum
17	Menia
18	Asyout
19	Suhag
20	Qena
21	Aswan
22	Luxor
23	Red Sea
24	ElWdi ElGidid
25	Matrouh
26	North Sinai
27	South Sinai

No.	Place
28	Alexandria Port
29	Damietta port
30	Port Said port
31	Suez port
32	Sofna port
33	Ohers ports
34	Cairo airport
35	Sudan border
36	Libya border
37	Israel border
38	Others

PART IV. AWARENESS

Q21. Please identify, by checking, transport policies being enforced in Egypt?

Current Measures for Improving Logistics Business in Egypt	Check
1. Road/rail network construction	
2. Truck routes (specified routes for truck)	
3. Truck lanes (specified lanes for truck)	
4. Truck parking facilities	
5. Truck ban	
6. Off-street loading/unloading facilities	
7. On-street loading/unloading bays	
8. Freight terminals (Urban Distribution Centers)	
9. Weight, size entry restrictions	
10. Minimum load factor entry regulations (example, truck cannot enter a place if not fully load)	
11. Road pricing (congestion pricing)	
12. Truck parking charges	
13. Parking, loading/unloading time limit	
14. License regulation on truck exhaust emission	
15. Low emission trucks (electric, idling stop trucks)	
16. Cooperative delivery (consolidation) of carriers (trucks)	
17. Land use zoning of transport generators and attractors	

Q22. Please describe your future plan to improve your business if you have (example, building of new warehouse, buying of trucks, etc)

Q23. Do you have any comments/suggestions to the government to improve the facilitation of business related activities?

3.3 Internal Logistics Survey

Company Code	
Survey Date	
Surveyor Name	

INTERNAL LOGISTICS SURVEY

The purpose of this survey is to obtain detailed logistics and freight related information of your activity in order to understand the present logistics condition in Egypt. The data will be analyzed and used as basis to formulate future strategic logistics development policies by the Ministry of Transport. We appreciate your cooperation.

PART I. GENERAL INFORMATION

Q1. Name of Company: _____

Q2. Address: _____

Q3. Email address: _____

Q4. Position: _____

Q5. Total no. of employees (all types) in this office _____ in all this governorate_____ in entire Egypt_____

Q6. Year Established: _____

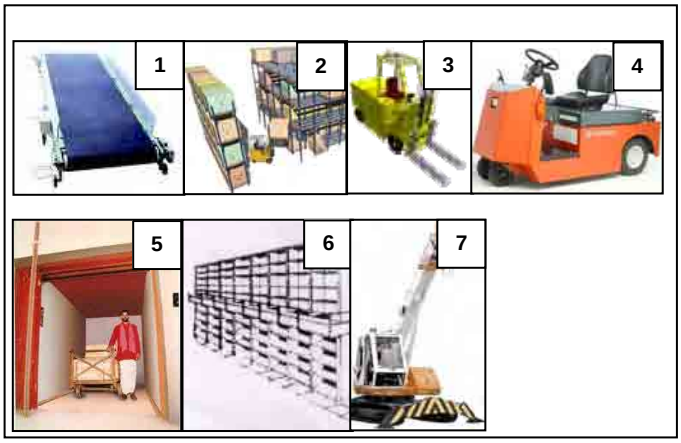
Q7. Encircle type of services/business

a. Agriculture, forestry and fishery
b. Mining, quarries and petroleum
c. Construction
d. Light manufacturing (food, beverage, tobacco, garment, pulp, paper, spinning, wood and leather)
e. Chemical manufacturing
f. Iron, steel and metal manufacturing
g. Machinery manufacturing
h. Electricity manufacturing
i. Others, specify _____

PART II: MATERIAL HANDLING EQUIPMENT

Q8. Please check the equipment that you have in your plant/manufacturing/warehouse center and indicate its number. Refer to the pictures for easy recognition of the equipment.

Material Handing Facilities	Check	How many
1. Conveyor		
2. Pallet		
3. Forklift		
4. Tow Tractor		
5. Freight Elevator		
6. Material Storage System		
7. Cranes		
8. Others, specify ( )		



Q9. Please identify the facilities useful to your operation but you don't have yet.

Material Handing Facilities	Check	Tell us the reason why you don't have it yet
1. Conveyor		
2. Pallet		
3. Forklift		
4. Tow Tractor		
5. Freight Elevator		
6. Material Storage System		
7. Cranes		
8. Others, specify ( )		

PART III: LOCATION FACTOR

Q10. Number of plant/manufacturing/warehouse center.

No*	Floor area (m^2)	Land size (m^2)	Location	Inside city or outside city	Distance from Port (km)	Travel time to Port	Transport Mode	Port name

** Indicate if it is a plant, manufacturing, warehouse or any type of facilities*

Q11. In selecting the location of this facility (your plant/manufacturing/warehouse center), kindly rank the most important consideration you made. 1 being the most important

Factors	Rank
1. Cheap labors and lands	
2. Superior transportation	
3. Favorable tax exemption	
4. Close to consumer market	
5. Availability of skilled labors	
6. Close to raw materials	
7. Superior information and communication technology	
8. Favorable political environment (stable)	
9. Others, specify ( )	

Q12. In the future when you build a new facilities (plant/manufacturing/warehouse center), tell us the top 3 factors you will strongly consider.

1.
2.
3.

Q13. What are the risks faced by your company since its operation?

Risks	Check
1. Strong labor union and frequent strikes	
2. Frequent shortage of power supply	
3. Shortage of skilled labors	
4. Unavailability of information and communication technology	
5. Others, specify ( )	

PART IV: OPERATION AND MANAGEMENT

Q14. What is the operation time of your plant/manufacturing/warehouse center? _____ (hr):_____ (min) to _____(hr):_____(min)

Q15. Do you have training program for your entire employee? a. Yes b. No

Q16. How often do you send your staff for training?
a. Once in every 5 months
b. Once in every year
c. Once in every 2 years
d. No training at all
e. Others, specify _____

Q17. What is the training subject? _____

Q18. Normally, what is the duration of the training?
a. Less than a day
b. 1 to 2 days
c. 3 to 4 days
d. 5 to 1 week
e. More than a week
f. No training at all
g. Others, specify _____

Q19. If training is held, tell us the levels of staff involved. You may encircle more than 1Senior managerial staff
a. Mid-managerial staff
b. Ordinary staff
c. Others, specify ( )

PART V: INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

Q20. Please check the ICT application you are using and indicate when the month and year you start using it.

Material Handing Facilities	Check	Tell us when have you started using (Month, Year)
1. Electronic Data Interchange (EDI)		
2. Extensive Mark-up language (XML)		
3. Internet		
4. E-commerce		
5. Electronic Order System (EOS)		
6. Automatic Picking System		
7. Automatic sorting machine		
8. Bar Coding and Scanning		
9. Data Warehouse		
10. Global Position Systems (GPS)		
11. Radio Frequency Identification (RDI)		
12. Geography Information System (GIS)		
13. In-vehicle Sensor		
14. On-board Data Recorder		
15. Mobile Data Communication		
16. Conveyor Belt		
17. Freight and Fleet Management System		
18. Container & Equipment Control System		
19. Container Storage Planning System		
20. Others, specify ( )		

Q21. Please identify the ICT application useful to your operation but you don't have yet.

Material Handing Facilities You want to have	Check	Tell us the reason why you don't have it yet
1. Electronic Data Interchange (EDI)		
2. Extensive Mark-up language (XML)		
3. Internet		
4. E-commerce		
5. Electronic Order System (EOS)		
6. Automatic Picking System		
7. Automatic sorting machine		
8. Bar Coding and Scanning		
9. Data Warehouse		
10. Global Position Systems (GPS)		
11. Radio Frequency Identification (RDI)		
12. Geography Information System (GIS)		
13. In-vehicle Sensor		
14. On-board Data Recorder		
15. Mobile Data Communication		
16. Conveyor Belt		
17. Freight and Fleet Management System		
18. Container & Equipment Control System		
19. Container Storage Planning System		
20. Others, specify ( )		

Q22. What is your primary objective of using ICT?

a. Easy and quick communication with customers
b. Support growth and thus increasing revenue
c. Reduce cost
d. Improve quality (example: faster and reliable)
e. Others, please specify _____

Q23. What application areas does your company use ICT on logistics business?

a. Enterprise resource planning (ERP)
b. Purchasing/Procurement
c. Production Scheduling
d. Warehouse management
e. Material Handling
f. Packaging
g. Labeling
h. Transportation management
i. Order processing
j. Customer services/customer relationship management (CRM)
k. Others, please specify _____

Q24. What impacts have occurred in your usage of ICT?

a. Increase ICT/ITS hardware and software cost
b. Reduce empty miles of travel and communication cost
c. Reduce load-waiting and delivery time
d. Reduce cost of staffs
e. Provide faster and reliable service to customers
f. Produce more business and thus increase revenues
g. Others, please specify_____

Q25. What barriers are you particularly concern about?

a. Availability of information
b. No economic scale UCT/ITS on logistics (no benefits)
c. Accuracy of information exchange
d. Timeliness of information

e. Information security
f. Compatibility of ICT/ITS systems between companies
g. Government regulation and administrative procedures
h. Resistance to changes
i. Shortage of professional staff
j. Lack of Information about the possibilities of new technologies
k. Others, please specify _____

Q26. What are the future applications for ICT on logistics
a. Enterprise resource planning
b. Purchasing/procurement
c. Production scheduling
d. Warehouse management
e. Material handling
f. Packaging
g. Labeling
h. Transportation management
i. Order processing
j. Customer service/customer relationship management
k. Others, please specify_____

Q27. What type of government support does your company expect to receive?
a. Provide a shareable platform
b. Data standardization
c. Strengthen the security of information
d. Provide training course
e. Provide new technology information promptly
f. Others, please specify _____

Q28. Please describe your future plan to improve your business if you have (example, building of new plant, buying of trucks, etc)

Q29. Do you have any comments/suggestions to the government to improve the facilitation of business related activities?

Appendix-2 Industrial Development

Appendix-2 Industrial Development

1. Industrial Zone

1.1 Industrial Zones in Governorates

Area in ha

Governorate Name	Industrial Zone	2006	2022
Cairo	Tora & Shak El Teban	0	420
	South of Helwan	1	2
	Katamya	0	69
	Shak El Teban (illegal possession)	0	73
	Robeky	0	126
Alexandria	New Manshya	165	165
	Nasrya	4	4
	Upper & Lower Margam	409	409
	Kilo 31, the desert road	342	342
	Spiko (Saudi company for petrochemicals)	67	67
	Industrial Development zone at its extensions	820	820
	Upper Agami Betash	1	1
	Bam Zegyo	406	406
Port Said	C1	28	28
	C6	0	1
	C8	0	0
	Northern west of Portex Company	11	11
	Fisherry tank at El Raswa	61	62
	C7	5	6
	C9 (Trust company for chemical products)	19	2
	C11(Craft residence and workshop)	0	0
Suez	Light industrial zone	150	150
Dakahlia	Southern West of Gamasa	36	85
	Asafra	3	15
Sharkia	Belbis (road of Belbis-Asher Kilo5)	20	42
Kalyobia	Sherok	0	40
	Safa industrial zone for industries	2	42
Kafr El Sheik	Baltim	24	29
	Motobas		422
Menofia	Mubark industrial zone & its extension	128	129
Behera	Natroon Valley	0	167
	Bosely desert	0	50

Area in ha

Governorate Name	Industrial Zone	2006	2022
Ismailia	East Kantara	72	229
	First industrial zone	23	92
	Valley of Technology	71	4,158
	Second industrial zone	42	61
Giza	Abu Rawash & its extension	507	590
Beni Suef	Bayad El Arab	78	173
	Kom Abu Rady	0	217
	Industrial zone 1/31	0	643
	Industrial zone 2/31	0	900
	Industrial zone 3/31	0	750
	Industrial zone 4/31	0	720
Fayoum	Kom Oshem	140	316
	Kota	504	840
Menia	Matahra East of the Nile	221	525
Asyut	Awamer Abob	69	137
	Zaraby in Abu Teg	6	8
	Safa (Bany Ghaleb)	90	112
	Sahel Selim	23	23
	Dashlot in Dayrot	8	23
	Badary	0	16
Suhag	Kawsar suburb	74	165
	Ahaywa	18	67
	Bet Dawood, west of Girga	5	251
	West of Tahta	16	218
Qena	Kalahen Kaft Center	18	84
	Industrial zone in Hoo	0	149
Aswan	Shalalat, Alaky Valley road	32	71
New Valley	Kharga	7	27
	Dakhla in Mot	2	14
Matrouh	Industrial zone at kilo 26 in the southern east of Matrouh	0	202
North Sinai	Baer El Abd	0	60
	industrial craft zone in Masaeid	3	60
	industrial zone for construction materials in Arish	0	15

1.2 New Industrial Zones in New Urban Communities

Area in ha

Industrial Zone	2006	2022 (estimated)
10th of Ramadan	3,500	4,000
6th of October	2,550	3,750
Burg El Arab	800	1,380
El Sadat	500	1,050

1.3 Total Number of the Authority Registered Establishments in New Industrial Areas

(1/6)

City/Area Name	Activity	No of establishments	Production Value	Investments	No of workers	Wages
City of 15 May	Foods, Beverages and Tobacco	5	15,033	13,786	330	1,040
	Textile, Fabric, clothes & Leather.	6	445,108	131,066	3,940	23,748
	Wood and its products	1	745	924	60	180
	Paper and its products, printing and publishing	1	5,500	10,581	105	710
	Fundamental chemicals and its products	7	10,685	4,120	82	251
	Construction materials, Porcelain, and china	1	918	429	6	18
	Engineering, electronic and electrical industries.	6	8,730	5,191	70	370
	Other manufacturing industries	1	11,520	1,500	8	20
	Total	28	498,239	167,597	4,601	26,337
Badr Industrial City	Foods, Beverages and Tobacco	15	301,708	238,537	517	6,980
	Textile, Fabric, clothes & Leather.	8	187,306	101,505	1,025	4,917
	Wood and its products	6	16,310	7,563	78	377
	Paper and its products, printing and publishing	3	6,410	27,045	118	1,213
	Fundamental chemicals and its products	39	894,526	466,000	1,972	16,112
	Construction materials, Porcelain, and china	5	68,120	25,808	122	1,281
	Fundamental metals	2	24,350	16,518	70	265
	Engineering, electronic and electrical industries.	36	1,246,502	243,775	1,571	11,971
	Other manufacturing industries	3	17,559	34,416	145	850
	Service and Maintenance Center	1	264	193	10	36
	Total	118	2,763,055	1,161,360	5,628	44,002
Public Free Zone in Nasr City	Foods, Beverages and Tobacco	4	98,042	63,136	556	1,372
	Textile, Fabric, clothes & Leather.	2	7,623	2,632	183	356
	Fundamental chemicals and its products	1	2,760	140	20	60
	Fundamental metals	1	7,000	4,100	21	83
	Engineering, electronic and electrical industries.	3	87,750	27,436	226	5,528
	Total	11	203,175	97,444	1,006	7,399

City/Area Name	Activity	No of establishments	Production Value	Investments	No of workers	Wages
New Borg El Arab City	Exploitation of mines and quarries	1	3,500	2,700	12	96
	Foods, Beverages and Tobacco	92	5,025,817	2,240,012	8,302	54,723
	Textile, Fabric, clothes & Leather.	51	605,147	824,183	4,992	23,519
	Wood and its products	14	69,050	75,763	1,051	3,599
	Paper and its products, printing and publishing	24	490,240	470,713	2,206	13,839
	Fundamental chemicals and its products	128	2,221,858	1,368,530	7,829	55,552
	Construction materials, Porcelain, and china	17	118,537	136,366	908	6,752
	Fundamental metals	19	760,525	258,027	1,128	6,479
	Engineering, electronic and electrical industries.	69	786,990	454,197	3,115	15,165
	Other manufacturing industries	2	4,770	6,153	14	49
	Total	417	10,086,434	5,836,644	29,557	179,773
Public Free area in Amerya	Foods, Beverages and Tobacco	1	5,600	1,235	53	144
	Textile, Fabric, clothes & Leather.	4	206,677	80,955	1,749	8,960
	Fundamental chemicals and its products	1	10,680	1,096	35	66
	Engineering, electronic and electrical industries.	4	103,335	98,157	377	2,433
	Other manufacturing industries	1	4,000	1,200	27	80
	Total	11	330,292	182,643	2,241	11,683
Public Free Area in Port Said	Foods, Beverages and Tobacco	5	15,714	52,975	457	1,352
	Textile, Fabric, clothes & Leather.	9	935,218	303,333	7,855	35,955
	Paper and its products, printing and publishing	1	23,625	50,000	200	1,100
	Fundamental chemicals and its products	2	44,959	32,471	163	1,648
	Fundamental metals	1	150,000	115,000	363	1,200
	Total	18	1,169,516	553,779	9,038	41,255

City/Area Name	Activity	No of establishments	Production Value	Investments	No of workers	Wages
New Suez "Ataka"	Foods, Beverages and Tobacco	6	1,896,202	1,017,018	1,864	29,401
	Textile, Fabric, clothes & Leather.	4	285,380	127,388	7,402	44,951
	Wood and its products	1	1,020	1,180	30	200
	Paper and its products, printing and publishing	1	73,434	68,374	139	3,550
	Fundamental chemicals and its products	8	939,873	3,275,248	8,868	199,557
	Construction materials, Porcelain, and china	6	1,175,275	1,524,134	4,181	36,276
	Fundamental metals	3	2,280,000	1,128,850	807	9,647
	Engineering, electronic and electrical industries.	4	275,862	153,660	296	4,998
	Other manufacturing industries	1	18,065	6,271	50	210
	Production and distribution of electricity lighting and power	1	416,354	1,920,092	875	15,013
	Total	35	7,361,465	9,222,215	24,512	343,803
Public Free Area in Suez Gulf	Production and distribution of electricity lighting and power	1	351,000	2,044,243	414	6,060
City of New Damietta	Foods, Beverages and Tobacco	13	350,538	132,109	329	1,967
	Textile, Fabric, clothes & Leather.	6	17,506	10,902	110	334
	Wood and its products	13	28,714	21,537	475	82,193
	Paper and its products, printing and publishing	1	3,100	2,745	29	400
	Fundamental chemicals and its products	16	113,463	85,407	431	2,081
	Construction materials, Porcelain, and china	4	3,453	2,842	62	171
	Engineering, electronic and electrical industries	9	101,090	78,711	430	1,691
	Total	62	617,864	334,253	1,866	88,837
El Salyhia City	Foods, Beverages and Tobacco	14	216,967	98,652	917	3,037
	Textile, Fabric, clothes & Leather.	5	581,538	228,984	3,869	22,811
	Wood and its products	1	2,960	1,715	61	219
	Paper and its products, printing and publishing	1	1,750	4,939	35	120
	Fundamental chemicals and its products	18	147,510	122,133	1,374	8,278
	Construction materials, Porcelain, and china	5	11,575	6,393	165	655
	Fundamental metals	1	800	605	13	40
	Engineering, electronic and electrical industries	18	3,529,193	772,984	3,700	36,806
	Total	63	4,492,293	1,236,405	10,134	71,966

City/Area Name	Activity	No of establishments	Production Value	Investments	No of workers	Wages
10th of Ramadan City	Plant and animal production	1	2,340	6,000	122	440
	Foods, Beverages and Tobacco	138	7,375,592	4,002,325	20,318	137,172
	Textile, Fabric, clothes & Leather.	230	5,690,668	4,070,785	42,679	237,907
	Wood and its products	32	130,384	123,386	2,186	8,399
	Paper and its products, printing and publishing	69	1,467,614	960,853	5,592	26,553
	Fundamental chemicals and its products	255	7,575,512	5,035,382	26,939	240,112
	Construction materials, Porcelain, and china	80	2,579,027	2,721,743	15,880	130,865
	Fundamental metals	27	7,086,464	1,606,738	3,414	15,750
	Engineering, electronic and electrical industries	354	27,149,724	5,340,261	31,905	201,594
	Other manufacturing industries	18	293,282	82,715	1,445	6,009
	Service and Maintenance Center	2	12,380	14,780	49	256
	Total	1206	59,362,987	23,964,968	150,529	1,055,057
Obor Industrial City	Plant and animal production	1	18,200	8,600	35	170
	Foods, Beverages and Tobacco	49	2,516,905	1,126,124	3,751	34,588
	Textile, Fabric, clothes & Leather.	37	563,192	449,951	3,805	16,924
	Wood and its products	10	109,557	221,539	997	6,076
	Paper and its products, printing and publishing	27	245,942	240,652	2,155	10,442
	Fundamental chemicals and its products	54	2,319,666	1,145,034	4,327	51,635
	Construction materials, Porcelain, and china	10	183,386	268,801	1,029	6,940
	Fundamental metals	5	1,065,545	665,928	473	7,635
	Engineering, electronic and electrical industries	78	4,689,668	1,118,646	7,619	45,734
	Other manufacturing industries	10	651,144	150,665	1,246	6,619
	Service and Maintenance Center	6	150	18,557	323	2,442
	Total	287	12,363,355	5,414,497	25,760	189,205

City/Area Name	Activity	No of establishments	Production Value	Investments	No of workers	Wages
Sadat City	Plant and animal production	3	46,140	33,010	280	1,646
	Foods, Beverages and Tobacco	42	1,171,638	845,746	3,069	22,774
	Textile, Fabric, clothes & Leather.	23	1,771,115	887,068	4,430	23,582
	Wood and its products	8	18,415	12,041	291	979
	Paper and its products, printing and publishing	7	16,502	18,577	298	1,115
	Fundamental chemicals and its products	74	507,306	335,490	2,503	11,466
	Construction materials, Porcelain, and china	18	510,732	767,159	3,104	33,325
	Fundamental metals	13	5,245,349	3,801,901	2,293	22,267
	Engineering, electronic and electrical industries	62	2,316,157	497,728	4,130	25,888
	Other manufacturing industries	5	12,450	26,183	167	724
	Total	255	11,615,804	7,224,903	20,565	143,766
New Nubarya City	Plant and animal production	1	21,040	36,000	28	116
	Foods, Beverages and Tobacco	15	316,557	350,503	1,134	10,624
	Textile, Fabric, clothes & Leather.	1	2,715	15,618	90	568
	Paper and its products, printing and publishing	1	350	8,708	12	60
	Fundamental chemicals and its products	13	152,760	75,328	203	2,362
	Fundamental metals	1	84,000	45,550	200	1,200
	Total	32	577,422	531,707	1,667	14,930
Public Free Area in Ismailia	Construction materials, Porcelain, and china	1	659	257	24	9
6th of October city	Exploitation of mines and quarries	1	2,960	8,200	50	840
	Foods, Beverages and Tobacco	130	6,628,636	2,865,614	14,703	124,869
	Textile, Fabric, clothes & Leather.	68	738,471	489,806	8,986	33,227
	Wood and its products	23	114,716	179,966	1,959	9,886
	Paper and its products, printing and publishing	50	1,253,247	1,927,063	5,608	54,711
	Fundamental chemicals and its products	216	7,456,177	4,196,518	16,821	175,324
	Construction materials, Porcelain, and china	72	813,170	760,060	5,616	43,368
	Fundamental metals	16	1,105,765	753,513	1,440	15,534
	Engineering, electronic and electrical industries	254	16,356,112	7,354,493	26,990	279,565
	Other manufacturing industries	4	38,111	22,204	416	1,370
	Total	834	34,507,365	18,557,437	82,589	738,694

City/Area Name	Activity	No of establishments	Production Value	Investments	No of workers	Wages
City of New Beni -Suef	Foods, Beverages and Tobacco	6	24,905	27,571	464	902
	Textile, Fabric, clothes & Leather.	2	1,487	863	14	48
	Fundamental chemicals and its products	5	28,680	11,234	102	612
	Construction materials, Porcelain, and china	3	5,053	9,247	140	663
	Fundamental metals	1	592	513	30	108
	Engineering, electronic and electrical industries	2	420	945	30	76
	Total	19	61,137	50,373	780	2,409
City of the new Menya	Exploitation of mines and quarries	1	360	360	31	108
	Foods, Beverages and Tobacco	1	5,616	2,441	25	240
	Paper and its products, printing and publishing	1	34	57	2	6
	Fundamental chemicals and its products	1	4,235	1,700	27	108
	Construction materials, Porcelain, and china	3	2,710	3,074	67	192
	Total	7	12,955	7,632	152	654

1.4 Increasing ratio (%) of New Industrial Zone Area / Total Existing Industrial Area

10^{th} of Ramadan

Commodity	Industrial Investment (%)	New Industrial zone (ha); A	Existing industrial zone (ha); B	Increasing ratio of new area/total existing area (%); A/B
Construction materials	7.8	39		1.1
Basic chemicals	21	105		3
Steel & iron ore	8.4	41		1.2
others	62.8	315		9
Total	100	500	3,500	

6^{th} of October

Commodity	Industrial Investment (%)	New Industrial zone area (ha)	Existing industrial zone area (ha)	Increasing ratio of new area vs total existing area (%)
Construction materials	8.51	102		4
Basic chemicals	22.92	275		10.8
others	68.57	823		32.3
Total	100	1200	2,550	

2. Organizations and Laws on Industry

Ministry of Investment states on its website (http//www.investment.gov.eg) as follows:

"In the 1990's, the Government of Egypt launched an Economic Reform Program, which was designed to be carried out in several phases. The first one had focused on stabilizing the economy, improving public finance and exchange rate policies and stabilizing inflation. The second phase targeted the trade and investment issues, private sector reform and banking sector restructuring. These reforms have been achieved through policy changes and through educational and other measures aiming at the improvement of economic and social welfare."

In line with the above-cited economic reforms, the cabinet reshuffle in 2004 led new leaders for industry policy reform. Government of Egypt is reforming the policies of industry to achieve Industry development goals. It is understood that there are many trade barriers to be reformed in Egypt as follows;

i) Various standards and technical regulations, inspection,

ii) Testing or certification requirements,

iii) Import licensing, import quotas, import bans,

iv) Customs procedures, special border documentation requirement,

v) High customs duties and other charges, and

vi) Discriminatory taxation practices.

In spite of various import and export barriers it is increasingly being understood that such a series of current policy reforms is rapidly improving business environment in Egypt.

2.1 Organizations

The JICA Study Team visited three major organizations of industry development: GAFI, IDA and IMC to inquire their vision, mission and activities.

(1) GAFI (General Authority for Investment and Free Zones, Ministry of Investment)

Ministry of Investment was established in July 2004 as a part of institutional reforms and GAFI's mandate was reoriented.

Just prior to the reshuffle of Government in 2004, a new law (No.14 Year 2004) was introduced amending the Investment Law No.8 Year 1997. This new law fundamentally changed GAFI mandate and roles related to FDI attraction and business.

GAFI is the principal governmental authority concerned with regulating and facilitating investment stands ready to assist investors worldwide. GAFI is likewise equipped with so-called "One-Stop Shop" for investors to Free Zones and plays on the behalf of related governmental agencies to provide the following services:

i) All licenses and approvals required for the establishment and operation of a project are obtained at GAFI for the investors; e.g. notarization of related deeds, issuance of residence permits and work permits.

ii) Investors' assistance for site selection and land acquisition-whether for agricultural, industrial or tourism activities.

iii) Certification of the dates of commencing production and helping investors to take full advantage of the tax holiday granted according to location.

(2) IDA (Industrial Development Authority, Ministry of Trade and Industry)

In January, 2006 Ministry of Trade and Industry established, and IDA was started. IDA is one of the related entities of Ministry of Trade and Industry. Its vision is to implement the Egyptian Industrial strategy which aims that Egypt becomes among the leading industrial countries in e Middle East and North Africa and its mission is to set, control and organize all needed industrial policies which were set by the Ministry of Trade and Industry to motivate and promote investments in the industrial sector, in particular in the industrial zones nation-wide.

(3) IMC (Industrial Modernization Center)

IMC was established by a presidential decree No.477 Year 2000 as an independent body to implemented and coordinate the modernization of the Egyptian industry. It is jointly funded by the European Union, the Government of Egypt and the Egyptian private sectors.

IMC's vision is to provide business development support to Egyptian industrial enterprises and to become the leading Egyptian Development Agency for industry, contributing to competitiveness, economic promotion, export growth and job creation.

Its mission is to support all industrial enterprises, according to their development needs, through comprehensive and customized business competitiveness programmes focused on:

i) Human Resource Development,

ii) Innovation, Research and Development,

iii) Technology Transfer,

iv) Access to Finance,

v) Exports development, and

vi) Quality systems.

IMC groups around 3,500 industrial enterprises in the area of Greater Cairo, Alexandria, Canal Zone, Upper Egypt and Delta Zone into fourteen Export Councils. 14 Export councils are organized by sectors of Woods Products, Food Industry, Clothes, Textile, Building Materials & Metal Products, Agricultural Crops, Home Textile, Medicines, Electronic Products, Leather & Leather Products, Books & Arts, Chemicals, Building, and Programs & Advanced Technology.

IMC together with Export Councils submits a monthly report of their activities including claims to the Government through EEPC (Egyptian Export Promotion Center) to Ministry of Trade and Industry.

2.2 Laws of Business

It is recognized that Investment Law No.8 Year 1997, Companies Law No.159 Year 1981 and their amendments are two key laws of business that regulate basically the investment procedures of Egypt.

Information on Law No.8 Year 1997 in this section is partially extracted from website of American Chamber of Commerce in Egypt (http://www.amcham.org.eg).

Law No.8 Year 1997 repealed Investment Law No.230 Year 1989. It made one authority responsible for investor incentives and guarantees – the General Authority for Investment and Free Zones (GAFI). It also grouped some 20 exemptions and incentives under one law, and specified activities that would automatically accrue benefits to investors It allows 100% foreign ownership of ventures and guarantees the right to remit income earned in Egypt and to repatriate capital.

Key provisions include: the guarantee against confiscation, sequestration and nationalization; the right to own land; the right to maintain foreign currency bank accounts; freedom from administrative attachment; the right to repatriate capital and profits; free hiring of Egyptian staff, absence of price control or restrictions, and equal treatment regardless of nationality.

Under Law No.8 Year 1997, investments are approved automatically for projects in 16 distinct fields, effectively creating a "positive list." These fields include land reclamation; fish, poultry and animal production; industry and mining; tourism (covering hotels, motels, tourist villages and transportation) and maritime transportation; refrigerated transportation for agricultural products and processed food; air transportation and related services; housing; real estate development; oil production and related services; hospitals and medical centers that offer 10% of their services free of charge; water pumping stations; venture capital; computer software production; projects financed by the Social Fund for Development; leasing; and guarantees for subscription in securities. In April 2000, new activities were added to the package of incentives to include development of new urban zones, software design and production of electronics, establishment and management of technology zones, credit classification, deductions, river transportation activities, management of industrial projects and utilities, and waste collection and treatment projects.

Law No.8 Year 1997 also permitted to establish a one-stop shop of GAFI for investors to facilitate and simplify approval, registration, licensing and certification for new projects instead of having to go to 25 separate ministries.

2.3 International Agreement

Egypt has signed multilateral and bilateral trade agreements to promote export of Egyptian products.

Egypt is one of the founding member countries of the world trade organization (WTO) and also a member country of the Group of fifteen (G15), the D-8 (with Iran, Turkey, Pakistan, Bangladesh, Indonesia, Malaysia, and Nigeria), and the Group of 77 (G77).

According to the report ("Egypt and the World, 2006", Ministry of Trade and Industry), major international agreements are the following;

(1) COMESA (the Common Market for East and South Africa) Agreement

Establishment of the COMESA

i) The Preferential Trade Area PTA Agreement between the countries of East and South Africa was signed on 21 December 1981, and entered into force on 30 September 1982.

ii) As a result of the success of this agreement the signatory countries decided to establish the Common Market for East and South Africa (COMESA). It is considered to be a new step closer to the African Economic Community. COMESA Treaty was signed on 8 December 1994, thus replacing the PTA Agreement.

Duration

Valid unless the Heads of States and Governments Assembly decides to terminate it upon the recommendation of the Ministerial Council. Egypt became a member in May 1998.

Main Objectives of The Common Market

i) To attain sustainable growth and development of member States by promoting a more balanced production and marketing structure,

ii) To promote joint development in all fields of economic activity, in addition to jointly adopting macroeconomic policies and its programs to improve the welfare of the citizens and encourage close relations between member States,

iii) To co-operate in the creation of suitable environment for domestic, foreign, and cross border investment, and

iv) To collaborate in strengthening the relations between the common market and the rest of the world,

v) To cooperate in driving peace and security process between member States so as to strengthen the economic development ties in the region.

Member States

COMESA constitute of 20 States members as follows: Angola, Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, Zimbabwe and Libya. Tanzania withdrawn from the COMESA in September 2000 and Namibia in

July 2003.

Organizational Structure of COMESA

i) The Authority (Heads of States and Governments),

ii) The Council of Ministers,

iii) Inter-Governmental Committee,

iv) The Committee of Governors of Central Banks,

v) Count of Justice, and

vi) Technical Committees.

Organizations of Subsidiaries to the COMESA:

i) Eastern And Southern African Trade And Development Bank (PTA Bank), current headquarter in Nairobi,

ii) Clearing House, current headquarter in Harare,

iii) COMESA Bankers Association, current headquarter in Harare,

iv) Leather And Leather Products Institute, current headquarter in Ads-Ababa, and

v) Reinsuring COMESA Company, current headquarter in Nairobi.

(2) Egypt-EU Partnership Agreement

Signature of The Agreement

The Agreement was signed on 25 June 2001.

Entry into Force

The trade provisions of the Agreement entered into force on 1 January 2004 and the other provisions of the agreement entered into force on 1 June 2004; after being ratified by the Egyptian people's assembly.

Objectives of the Agreement

i) Establishing an adequate framework for a political dialogue to develop close political ties between the parties,

ii) Gradual liberalization of trade in industrial goods and agricultural products as well as, services and capital movement,

iii) Developing balanced economic and social relations through mutual cooperation,

iv) Contributing to the process of economic and social development in Egypt,

v) Encouraging regional cooperation to promote peaceful coexistence and economic and political stability, and

vi) Promoting cooperation in other fields of mutual interest.

Free Trade Area (FTA)

According to the Agreement, FTA to be established during 12-year transitional period, from the date of entry into force of the Agreement.

During the third year of the implementation of the agreement the two parties shall determine the measures to be applied from the fourth year to further liberalize their trade in agricultural, fisheries and processed agricultural products.

The Agreement permits Egypt to take certain exceptional measures for specific periods during the transitional stage, if and when certain domestic industries face a threat as a result of liberalization of imports of similar goods from the EU.

The Agreement includes implementation of WTO and GATT regulations against anti-dumping, subsidy and safeguard measures. The Agreement allows each party to receive Most Favorite Nation treatment from the other party in trade in services.

The Agreement aims at increasing the flow of foreign capital, expertise and technology to Egypt.

Egyptian exports of manufactured goods to the EU will be exempted from tariffs from the date the Agreement entered into force, meanwhile, EU exports of manufactured goods to Egypt shall be tariff-exempted according to the lists and time frame specified in the Agreement.

Agricultural products and agricultural processed products shall be treated according to the provisions stipulated in the agreement which defines certain quotas for specific goods with tariff privileges.

Benefits from the Establishment of FREE TRADE AREA (FTA) between Egypt and the EU

Manufactured Products

Both parties shall benefit from trade liberalization of tariff and non tariff barriers within the Agreement.

Exempted Egyptian Exports

Egyptian exports of manufactured goods to the EU shall be exempted from tariffs or any other duties and fees having similar effects from the date the Agreement entered into force.

Exempted EU Exports

Manufactured goods exported from EU to Egypt are to be exempted from all tariff and non tariff barriers having the same effect according to the following time frame for four different groups of goods:

i) Group 1: Tariffs are to be gradually eliminated over 3 years. A reduction of 25% has been applied on 1 January 2004, 2005, 2006 and 2007.

ii) Group 2: Tariffs will be reduced gradually in the following manner: 10% after 3 years from the date the Agreement enters into force to be followed by an annual tariff reduction of 15% over 6 years until tariffs are fully eliminated.

iii) Group 3: Tariffs will be reduced gradually in the following manner: 5% after 5 years from the date the Agreement enters into force to be followed by a 10% reduction on the following year, followed by a reduction of 15% annually for 5 years and 10% reduction in the final year.

iv) Group 4: Tariffs will be gradually reduced by 10% annually after the elapse of 6 years from the date the Agreement enters into force, until tariffs are fully eliminated.

(3) Free Trade Agreement between Egypt and Turkey

The Establishment of the Agreement According to the Agreement

Egypt and Turkey have signed on 27 December 2005 a Free Trade Agreement. The Agreement is drafted in accordance with the provisions of the chapters related to the free trade area in the Association Agreement between Egypt and the EU.

Imports into Turkey of industrial products originating in Egypt shall be allowed free of customs duties and other charges having equivalent effect, upon the entry into force of the Agreement.

Regarding agricultural, processed agricultural & fishery products

On the other hand, customs duties and other charges having equivalent effect on imports into Egypt of industrial products originating in Turkey shall be gradually abolished according to the schedules of four lists which are identical to the lists attached to the Association Agreement. The dismantling of customs duties on Turkish goods of each list shall be affected one year behind the similar list of EU. The two parties have agreed to grant each other concessions either as free tariff quotas or reduction of the customs duties on lists of these products.

Rules of Origin

The two parties have agreed to apply the Pan-Euromed Rules of Origin on the goods exchanged among themselves

Trade in Services

Egypt and Turkey are now in the process of ratifying the Agreement. Once this process been finalized the Agreement shall enter into force.

(4) AGADIR Agreement (Agreement on the Establishment of a Free Trade Area between the Arab Mediterranean Countries)

Declaration and Members

"Agadir Declaration" was signed by the Hashemite Kingdom of Jordan, the Tunisian Republic, the Arab Republic of Egypt, and the Kingdom of Morocco in the Moroccan city of Agadir on 5/8/2001 for the establishment of a free trade area for the Arab Mediterranean countries. Therefore the four countries signed in Rabat on 25 February 2004 the agreement on the establishment of the Free Trade Area between the four countries.

Rules of Origin

It was agreed to apply the Pan-Euromed rules of origin on the goods exchanged among themselves.

Other Arab Members

The Arab countries member of the Arab league who are members of the Pan Arab Free Trade Area and have Association or a Free Trade Area agreement with the EU can join Agadir agreement on the acceptance of its members.

Objectives of the Agreement

i) To establish a free trade area between the member states by 1/1/2005,

ii) To develop economic and commercial cooperation between the member countries, and

iii) To encourage economic and industrial integration among member countries by applying cumulation rule to produce goods for export to EU as well as to their domestic markets.

(5) TIFA (Egypt-USA Trade and Investment Framework Agreement)

Duration

This agreement shall remain in force unless terminated by mutual consent of the parties (Egypt and the USA) or by either party upon six months notice to other party.

The Establishment of Agreement

Egypt-USA Trade and Investment Framework Agreement (TIFA) was signed in Washington D.C on 1 July 1999. The Agreement aims to expand favorable conditions for long term development and diversification of trade between both countries nationals and companies.

Establishment of the United States-Egypt Council on Trade and Investment

i) The Egyptian side is chaired by the Ministry of Trade and Industry and the US side is chaired by the United States Trade Representative (USTR).

ii) The Agreement calls that the Council is to meet at such times as agreed by the two parties.

iii) The TIFA Council has met four times so far. The first meeting was held in Cairo (19 November 1999). The second in Washington D.C (1 October 2002). The third in Cairo (February 2005). The fourth in Washington (December 2005).

iv) The objective of the Council is to hold consultations on specific trade matters, and those investment matters, not arising under the Investment Treaty, of interest to the parties, and to identify and work toward the removal of Impediments to trade and investment flows.

v) The USA-Egypt Trade and Investment Framework Agreement is a first step towards working on initiating talks between the two sides in regards to establishing a Free Trade Agreement.

(6) QIZ (Qualifying Industrial Zones)

Qualifying Industrial Zones (QIZ) is a preferential trade protocol allowing Egyptian products customs-free access to US markets, provided these products satisfy certain rules of origin requirements, and satisfy an Israeli content requirement.

The protocol applies to four geographic areas in Egypt that contain a large percentage of Egyptian industry, which are Greater Cairo, Alexandria, Central Delta region, and the Suez Canal region. Further areas may be added at the approval of the US Government.

In light of Egypt's developed infrastructure, highly competitive production costs, and well established business and regulatory environment, Qualifying Industrial Zones present a strong export base to US markets.

QIZ Trade Statistics is shown in Table A2.1.

Table A2.1 QIZ Trade Statistics

QIZ Trade Information			
	No. of Companies	Exports to US (USD million)	Imports from Israel (USD million)
Feb 22 – June 30, 2005	54	61.6	8.2
July 1 – Sept 30, 2005	70	116.0	14.7
Oct 1 – Dec 30, 2005	85	110.7	13.5
Jan 1 – March 31, 2006	96	118.1	13.0
Cumulative Total	305	406.4	49.4

Source ; QIZ Trade Statistics

(7) PAFTA (Pan Arab Free Trade Area)

The Establishment of the Pan Arab Free Trade Area

The Agreement on Facilitation And Development of Trade Among Arab States was signed by the members of the Arab league on 27 February 1981 to enhance the implementation of this Agreement the member states agreed on 19 February 1997 on the arrangements to establish the Pan Arab Free Trade Area to be completed within 10 years.

The Arab Summit held in Beirut in March 2002 and the Economic And Social Council meeting held in September 2002 decided to reduce the transitional period for the implementation of the Pan Arab Free Trade Area (PAFTA) to be seven years ending in January 2005.

Member States of the PAFTA

Egypt - United Arab Emirates (UAE) – Bahrain – Jordon – Tunisia – Saudi Arabia – Sudan – Syria – Iraq – Oman – Palestine – Qatar – Kuwait – Lebanon – Libya – Morocco – Yemen.

Non Member States

Members of the Arab League who have not yet finalized the procedures to join the area: Algeria – Djibouti – Somalia – Comoros Islands – Mauritania.

Establishment of Free Trade Area (FTA)

Elimination of customs duties and other fees and duties having similar effects was implemented as follows: 10% annual reduction on 1 January of each year from 1998 to 2003 and by 20% for the years 2004 and 2005.

Elimination of Non Tariff Barriers (NTB's)

Member States should eliminate all non tariff barriers, including Administrative, Monetary, Financial and Technical barriers.

Preferential Treatment for the Least Developed Member States

The Arab Summit decided to grant the least developed member states a preferential treatment, through which their exports to the other member states should enjoy free access and exemption and custom duties, meanwhile they have to reduce their customs tariffs gradually in five installments starting from 1 January 2005.

Rules of Origin

The rules of origin applicable at the moment require that the value added should not be less than 40% of ex-factory cost. Detailed rules of origin have been under discussion among member states for some time, when agreed upon, it will replace the previous one.

Trade in Services

Agreement has been reached on the general Provisions of the Agreement. Negotiations shall start soon between member states to agree on the specific commitments of each member.

Appendix-3 Methodology of Freight Demand Forecast

Appendix-3 Methodology of Freight Demand Forecast

1. Transhipment Container

1.1 Future Framework for Trade in the World

The volume of transhipment containers is totally dependent on international trade condition. It is therefore necessary to set a future framework for trade in the world. For this purpose, the JICA Study employed data and projections presented in "World Economic Outlook in 2007 – Spillovers and Cycles in the Global Economy" (WEO) issued by International Monetary Fund (IMF).

The WEO in 2007 categorizes the countries in the world into two major groups: "advanced economies" and "other emerging market and developing countries". The group of "advanced economies" includes 30 countries (the United States, Japan, Germany, France, Italy, the United Kingdom, Canada, etc), while the group of "other emerging market and developing countries" includes 143 countries which are categorized into six sub-groups (Africa, Central and Eastern Europe, Commonwealth of Independent States, Developing Asia, Middle East and Western Hemisphere).

The annual growth rates of import and export volumes of the sub-group for medium term (2007-2012) are projected in the WEO as shown in Table A1.1.1 and Table A1.1.2, respectively. The JICA Study applied these growth rates for forecasting the demand of container transhipment at ports in Egypt since both have changed in parallel to each other. The growth rate between 2013 and 2022 was assumed to be the same as that of the year 2012.

Table A1.1.1 Growth Rate of Import Volume by IMF Group and Sub-group

Unit: %

Year	Advanced economies	Other emerging market and developing countries						World
		Africa	Central and Eastern Europe	Commonwealth of Independent States	Developing Asia	Middle East	Western Hemisphere	
2006	7.4	11.3	12.1	15.9	17.6	15.9	11.8	9.2
2007	4.7	12.9	11.5	12.0	13.4	14.1	9.6	7.0
2008	5.7	9.4	9.6	10.8	15.7	10.9	8.4	7.4
2009	5.6	5.9	8.1	8.6	13.1	7.4	6.1	6.8
2010	5.6	5.9	8.1	8.6	13.1	7.4	6.1	6.8
2011	5.6	5.9	8.1	8.6	13.1	7.4	6.1	6.8
2012	5.6	5.9	8.1	8.6	13.1	7.4	6.1	6.8

Source: World Economic Outlook in 2007, IMF

Table A1.1.2 Growth Rate of Export Volume by IMF Region and World

Unit: %

Year	Advanced Economies	Other Emerging Market and Developing Countries						World
		Africa	Central and Eastern Europe	Commonwealth of Independent States	Developing Asia	Middle East	Western Hemisphere	
2006	8.4	3.8	12.8	6.4	16.5	5.9	4.5	9.2
2007	5.5	10.6	10.4	6.8	15.0	7.0	4.1	7.0
2008	5.8	5.7	9.5	7.2	15.3	4.3	5.6	7.4
2009	5.4	4.6	8.2	6.2	12.2	6.4	5.8	6.8
2010	5.4	4.6	8.2	6.2	12.2	6.4	5.8	6.8
2011	5.4	4.6	8.2	6.2	12.2	6.4	5.8	6.8
2012	5.4	4.6	8.2	6.2	12.2	6.4	5.8	6.8

Source: World Economic Outlook in 2007, IMF

1.2 Method of Forecast for Future Transhipment Container Volume

The future transhipment container volume handled at the Egyptian ports was forecasted based on the volumes in 2005 and the future growth rates of export/import explained in the previous section. The forecasting steps are as follows:

Step 1: Confirmation of Origin and Destination Countries for Transhipment Containers

Table A1.2.1 shows the top 20 countries by transhipment container volume handled at the Egyptian ports in 2005. As shown in the table, the 20 countries covered about 90% of the total transhipment container volumes, while other countries accounted for only about 10%.

Step 2: Grouping of Countries based on IMF group/sub-group

The top 20 countries and other countries were classified into the IMF's group and sub-group as shown in Table A1.2.2. Growth rates of other countries were assumed to be the same as that of the world.

Step 3: Forecast of Future Transhipment Container Volumes

By applying the future growth rate of import and export volumes between 2006 and 2022, the future transhipment container volumes handled at the Egyptian port in 2022 were forecasted. It was assumed that the growth rate of inbound transhipment container from a country A to Egypt was the same as that of international export of the IMF group/sub-group that the country A belongs to, while the growth rate outbound transhipment from Egypt to the country A was assumed to be the same as that of the international import of the IMF group/sub-group that the country A belongs to.

Table A1.2.1 Top 20 countries by Transhipment Container Volume through Egypt in 2005

Rank	Country Name	Inbound		Outbound		Total	
		TEU	Accum. %	TEU	Accum. %	TEU	Accum. %
1	Turkey	118,072	9.5	168,756	14.7	286,828	12.0
2	Israel	115,484	18.9	127,524	25.7	243,008	22.2
3	Egypt	104,125	27.3	118,263	36.0	222,388	31.5
4	Malaysia	133,651	38.1	51,954	40.5	185,605	39.3
5	China	85,074	45.0	80,346	47.5	165,420	46.2
6	Syria	62,457	50.1	66,360	53.3	128,818	51.6
7	Italy	61,163	55.0	60,278	58.5	121,442	56.7
8	Cyprus	70,525	60.7	37,968	61.8	108,494	61.2
9	Sri Lanka	47,007	64.5	28,154	64.2	75,162	64.4
10	France	25,891	66.6	48,609	68.5	74,501	67.5
11	Saudi Arabia	36,742	69.6	35,576	71.6	72,319	70.5
12	Greece	27,171	71.8	41,792	75.2	68,964	73.4
13	Singapore	28,726	74.1	34,991	78.2	63,718	76.1
14	Hong Kong	22,759	75.9	36,208	81.4	58,968	78.6
15	Spain	38,118	79.0	20,496	83.2	58,615	81.0
16	Belgium	28,820	81.3	20,669	84.9	49,490	83.1
17	Lebanon	20,654	83.0	23,054	87.0	43,709	84.9
18	Malta	18,292	84.5	21,198	88.8	39,491	86.6
19	Ukraine	17,058	85.9	17,669	90.3	34,728	88.0
20	India	21,178	87.6	13,532	91.5	34,711	89.5
-	Other countries	153,497	100.0	97,824	100.0	251,309	100.0
	Total	1,236,464		1,151,221		2,387,685	

Source: Statistical Book 2005, Egyptian Maritime Data Bank

Table A1.2.2 Country Names and IMF's Groups/Sub-groups

No	Country Name	IMF Group/Sub-group
1	Turkey	Central and eastern Europe
2	Israel	Advanced economies
3	Egypt	Middle East
4	Malaysia	Developing Asia
5	China	Developing Asia
6	Syria	Middle East
7	Italy	Advanced economies
8	Cyprus	Advanced economies
9	Sri Lanka	Developing Asia
10	France	Advanced economies
11	Saudi Arabia	Middle East
12	Greece	Advanced economies
13	Singapore	Advanced economies
14	Hong Kong	Advanced economies
15	Spain	Advanced economies
16	Belgium	Advanced economies
17	Lebanon	Middle East
18	Malta	Central and eastern Europe
19	Ukraine	Commonwealth of Independent States
20	India	Developing Asia
21	Other countries	World

1.3 Future Transhipment Container Volumes through Egypt

Table A1.3.1 shows the result of the projection of the future transhipment container volume handled at Egyptian ports in 2022. The number of total transhipment containers was projected to be 10,386 thousand TEU in 2022. This demand is about 4.35 times the actual volume in 2005. The annual average growth rate was worked out to be about 9.0%[1].

This high growth rate is attributed to the high growth rates in developing Asian countries in the World Economic Outlook. This would be rational considering in the industrialization of Asian countries.

Table A1.3.1 Future Transhipment Container Volume through Egypt in 2022

Unit: thousand TEU

	Actual in 2005 (1)	Forecast in 2022 (2)	Growth Ratio (2)/(1)
Inbound	1,236	5,271	4.26
Outbound	1,151	5,115	4.44
Total	2,387	10,386	4.35

Source: Estimated by JICA Study Team

[1] This high figure is greatly attributable to the annual growth rate of the transhipment container volume handled at Egyptian pots between 2004 and 2005 reached about 30% due to activation of Port Said Port (East) (the website of Maritime Transport Sector).

2. Export and Import Volumes by Commodity Type

2.1 Data Source

There were two available data for the export and import volumes in Egypt: 1) Statistical Yearbook 2005, Egyptian maritime Data Bank (EMDB), and 2) a time series data (1997 – 2006) obtained from Central Agency of Public Mobilisation and Statistics (CAPMAS). The export and import volumes at each port in 2005 were only available in the data of EMDB while the time series data was only available in the data of CAPMAS. The export and import volumes of both data were not necessarily consistent with each other. Therefore, the data of EMDB was used for the base data of the current export and import volumes (2005) at each port, while the data of CAPMAS was used for the trend analysis of each commodity type.

2.2 Commodity Type

For the commodity type, the top nine commodities (Table 3.3.7 in Chapter 3) of export and import were selected (9*2=18 commodities plus others). Since commodity type of "Gaseous Hydrocarbons, Liquid or Compressed" existed both in export and import, these were classified into a commodity type of "Hydro Carbon". The total number of commodity type was 18, including others as shown in the table below.

Table A2.1.1 Commodity Type

Code	Commodity	Code	Commodity	Code	Commodity
1	Cement	7	Sand	13	Woods sleepers
2	Hydro carbon	8	Stone	14	Iron ore
3	Phosphate	9	Steel	15	Oil seeds
4	Motor Spirit	10	Wheat	16	Pig steel
5	Salt	11	Maize	17	Animal fat
6	Rice	12	Basic Chemical	18	Others

Source: JICA Study Team

2.3 Method

Growth ratios (the ratio of volume in 2022 to that in 2005) were estimated for every commodity types. The export and import volumes in 2022 shown in Table 3.3.11 in Chapter 3 were calculated by multiplying those of EMDB data in 2005 by the growth ratios.

To estimate the growth ratios, regression analyses were carried out for the commodities that showed a stable growth trend. CAPMAS data were used for the analyses. The logarithm of GDP or population was used for the explanatory variable. The following formula was used for the regression analyses:

$$Y(x) = a \ln (x) + b$$

Where, Y = Volume
x = GDP or population
a, b = constant values

The future traffic volume was estimated from the above mentioned model. The growth ratio was computed as follows:

Growth Ratio = Y(x in 2022)/ Volume in 2005

If the past data showed fluctuation rather than a growth trend, elasticity values were calculated using the data of two points in time. In this case, the growth ratios were calculated as follows:

Growth Ratio = (GDP in 2022)/(GDP in 2005) * Elasticity

The results of the estimation are summarized in the next section (2.4).

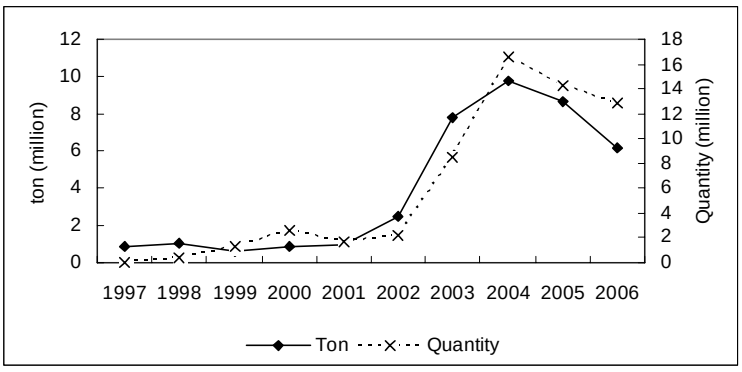
As described in Chapter 3 (3.2.3), the annual growth rate of 6.9% was applied for the GDP growth in the future scenario, from which the GDP in 2022 was calculated to be 3.109 times that of 2005. For the future population, the annual population of 1.41% was applied as described in Chapter 3 (3.2.1), from which the population in 2022 was calculated to be 1.25 times that of 2006. According to CAPMAS data, the population in 2006 was 1.02 times that of 2005. The ratio of the population in 2022 to 2005 was calculated as 1.25 * 1.02 = 1.275.

2.4 Estimation of Growth Ratio by Commodities

The followings are the results of the estimation of the growth ratio by commodity type. The analysis of each commodity type is summarized with the corresponding CAPMAS Code, the applied method (GDP Elasticity or Regression Analysis), the estimated growth ratio, the chart of export or import volume, and additional information dependent of the method. If the GDP Elasticity method is applied, GDP and volume (export or import) to calculate the elasticity are shown, while the result of formula and calculation are shown in case of the regression analysis.

(1) Export of Cement (1), Phosphate (3), Salt (5), Sand (7) and Stone (8)

CAPMAS Code: 25 (Salt, Sulfur; earths and stone, plastering materials, Lime and cement)
Method: GDP Elasticity
Growth Ratio (2022/2005): 3.109 * 0.683 = 2.123

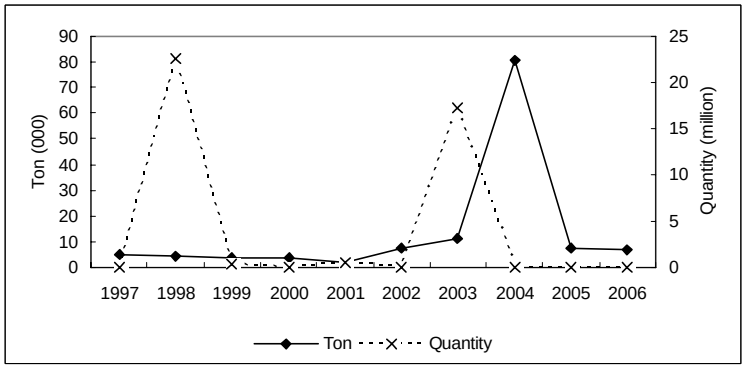


Source: CAPMAS database

	2003	2006	2006/2003	Elasticity
GDP (mil LE)	498,778	581,145	1.165	0.683
Volume (ton)	7,759,757	6,176,092	0.796	

(2) Export of Hydro Carbon (2)

CAPMAS Code: 29 (Organic chemicals)
Method: Regression Analysis
Growth Ratio (2022/2005): (19414/7156) = 2.71

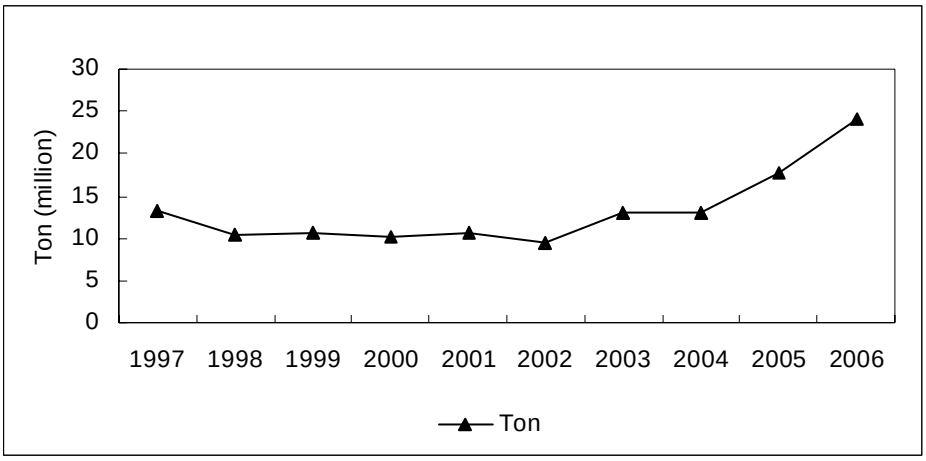


Source: CAPMAS database

Y (ton) = 10,707 ln (GDP (mil LE)) – 134,121 (R2=0.26)
2005: Y = 7,156 (actual data)
2022: Y = 10707 ln (1690160) – 134,121 = 19,414

(3) Export of Motor Spirit (4)

CAPMAS Code: 27 (Mineral fuels, oils, distillation products, etc)
Method: Regression Analysis (1997 - 2006)
Growth Ratio (2022/2005): 42.43/17.66 = 2.40

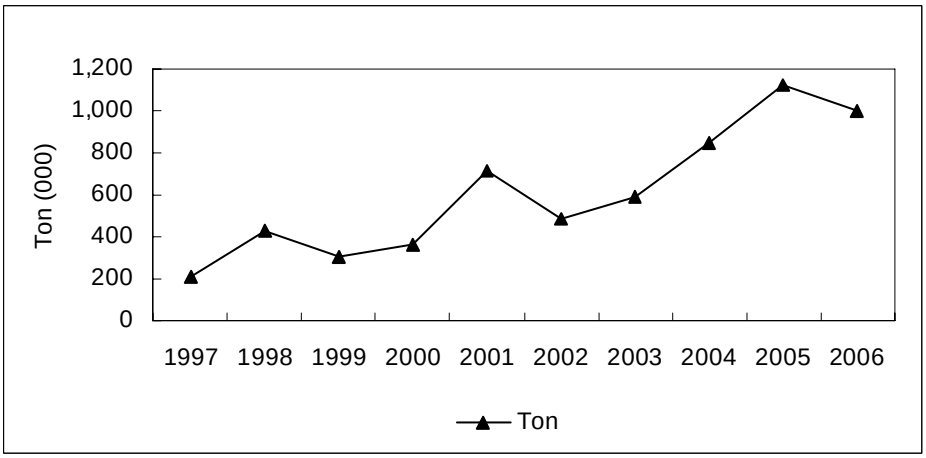


Source: CAPMAS database

Y (million ton) = 23.76 ln (GDP (mil LE)) – 298.3 (R2=0.46)
2005: Y = 17.66 (actual data)
2022: Y = 23.76 ln(1,690,160) – 298.3 = 42.43

(4) Export of Rice (6)

CAPMAS Code: 10 (Cereals)
Method: Regression Analysis (1997 - 2006)
Growth Ratio: 3,317/1,121 = 2.96

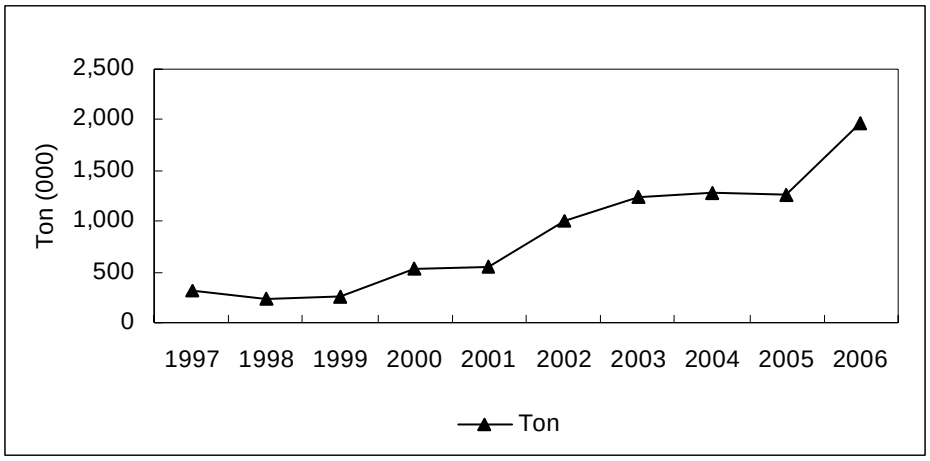


Source: CAPMAS database

Y (1000ton) = 2,131.3 ln (GDP (mil LE)) – 27,247 (R2=0.80)
2005: Y = 1,121 (actual data)
2022: Y = 2,131.3 ln(1,690,160) – 27,247 = 3,317

(5) Export of Steel (9)

CAPMAS Code: 72 (Iron and steel)
Method: Regression Analysis (1997 - 2006)
Growth Ratio (2022/2005): 6190/4187 = 4.89

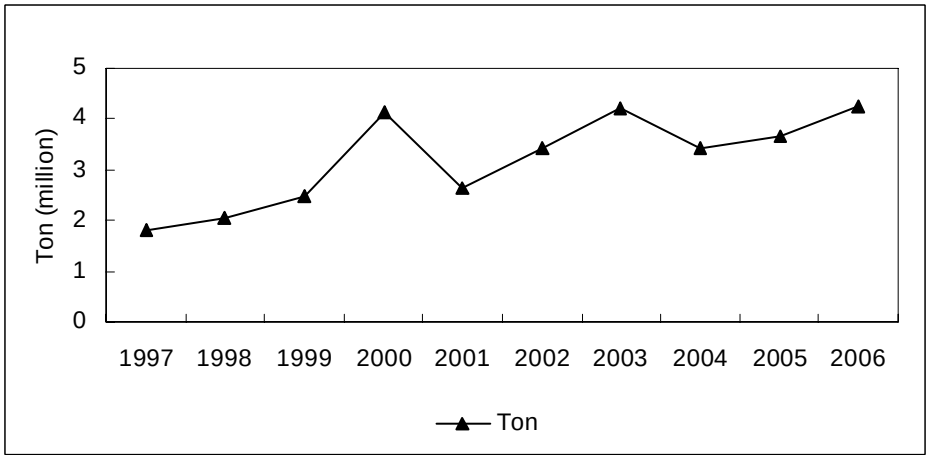


Source: CAPMAS database

Y (1000ton) = 4,187.8 ln (GDP (mil LE)) – 53,864 (R2=0.88)
2005: Y = 1,267 (actual data)
2022: Y = 4187.8 ln (1,690,160) – 53,864 = 6,190

(6) Export of Others (18)

CAPMAS Code:
Method: Regression Analysis (1997 – 2006)
Growth Ratio (2022/2005): 10446/5691 = 2.86



Source: CAPMAS database

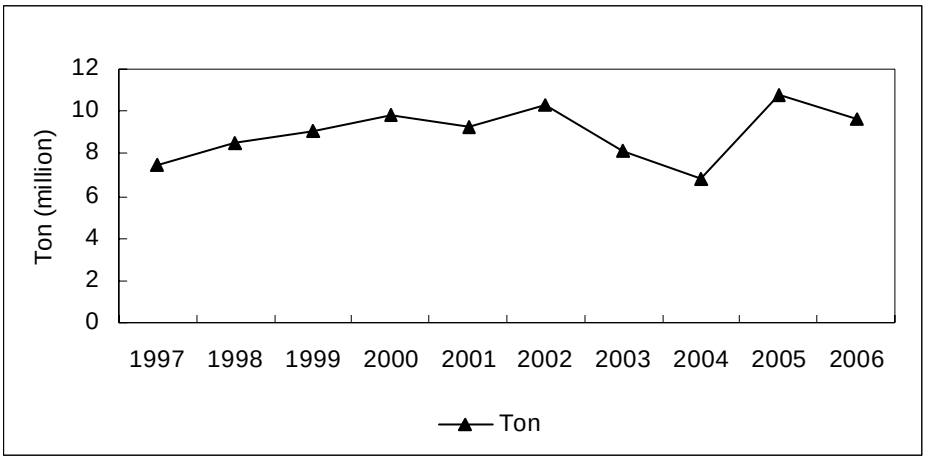
Y (1000ton) = 5,691 ln (GDP (mil LE)) – 71,165 (R2=0.66)
2005: Y = 3,658
2022: Y = 5,691 ln(1,690,160) – 71165 = 10,446

(7) Import of Wheat (10) and Maize (11)

CAPMAS Code: code 10 (Cereals)

Method: Regression Analysis

Growth Ratio (2022/2005): 1.275 * 1.081 = 1.378



Source: CAPMAS database

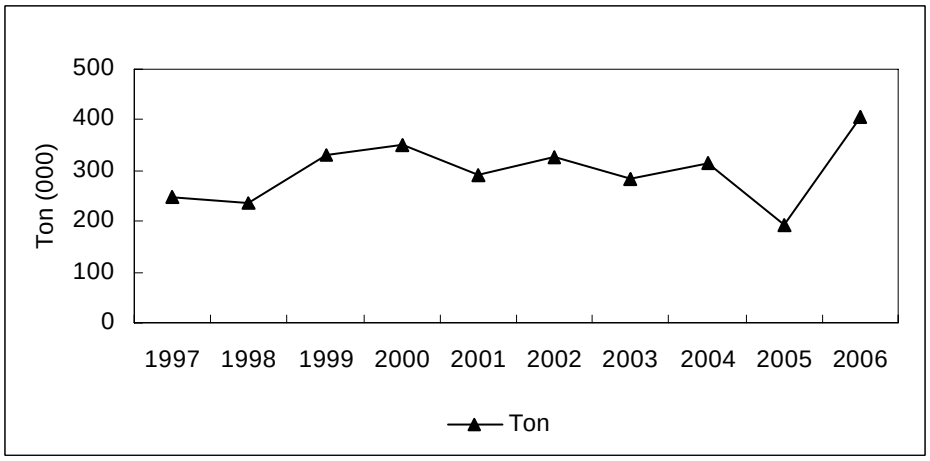
	1997	2006	2006/1997	Elasticity
Population	60,310,135	71,347,271	1.183	1.081
Volume (ton)	7,507,094	9,597,168	1.278	

(8) Import of Basic Chemical (12)

CAPMAS Code: 28 (Inorganic Chemicals, Organic or Inorganic Compounds of Precious Metals)

Method: GDP Elasticity

Growth Ratio (2022/2005): 3.109 * 1.087 = 3.379

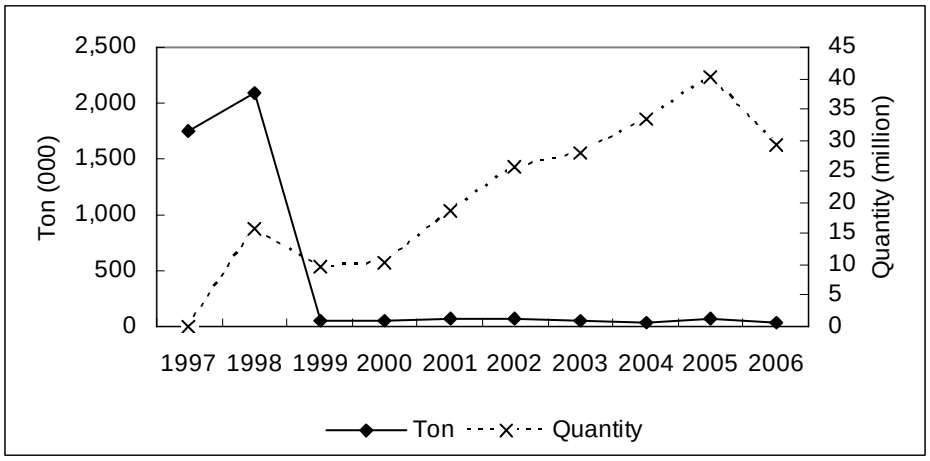


Source: CAPMAS database

	1997	2006	2006/1997	Elasticity
GDP (mil LE)	385,517	581,145	1.507	1.087
Volume (ton)	246,500	403,891	1.639	

(9) Import of Woods Sleepers (13)

CAPMAS Code: 44 (Wood and articles of wood, wood charcoal)
Method: Regression Analysis (1998 - 2006)
Growth Ratio (2022/2005): 119.2/ 40.2 = 2.97

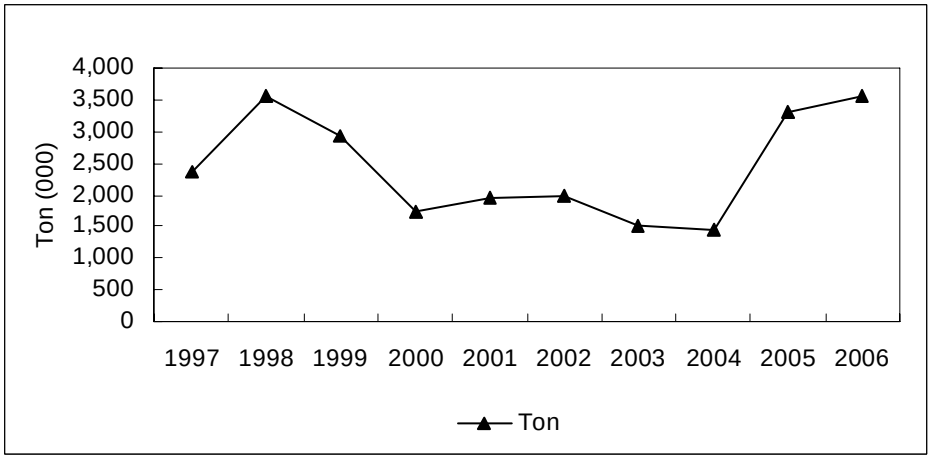


Source: CAPMAS database

Y (million in quantity) = 76.86 ln (GDP (mil LE)) – 983 (R2=0.68)
2005: Y = 40.2 (actual data)
2022: Y = 76.86 ln(1,690,160) – 983 = 119.2

(10) Import of Iron Ore (14) and Pig Steel (16)

CAPMAS Code: 72 (Iron and steel)
Method: GDP Elasticity
Growth Ratio (2022/2005): 3.109 * 1.002 = 3.115

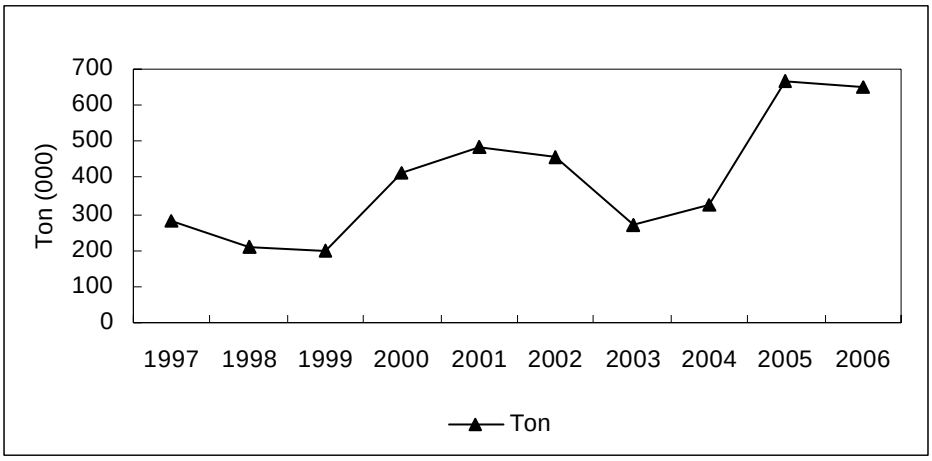


Source: CAPMAS database

	1997	2006	2006/1997	Elasticity
GDP (mil LE)	385,517	581,145	1.507	1.002
Volume (ton)	2,347,867	3,547,366	1.511	

(11) Import of Oil Seeds (15)

CAPMAS Code: 12 (Oil seed, oleaginous fruits, grain, seed, fruit, etc)
Method: Regression Analysis (1997 – 2006)
Growth Ratio: 1646/665.9 = 2.47

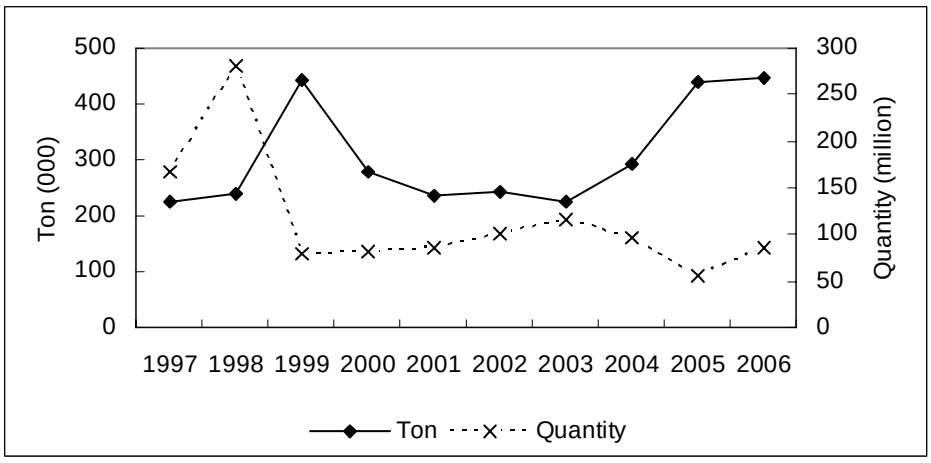


Source: CAPMAS database

Y (1000ton) = 984.2 log (GDP (mil LE)) – 12,468 (R2=0.56)
2005: Y = 665.9 (actual data)
2022: Y = 984 ln(1,690,160) – 12,468 = 1,646

(12) Import of Hydro Carbon (2)

CAPMAS Code: 29 (Organic chemicals)
Method: GDP elasticity
Growth Ratio (2022/2005): 3.109 * 0.816 = 2.5

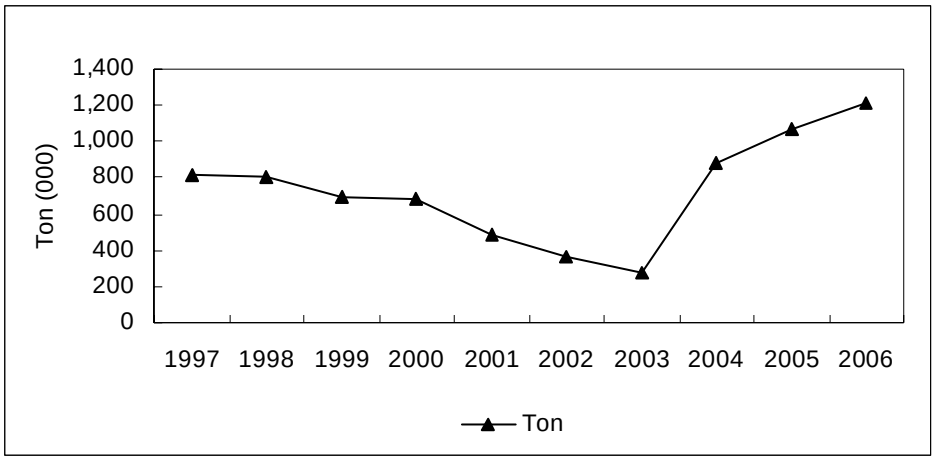


Source: CAPMAS database

	1999	2006	2006/1999	Elasticity
GDP (mil LE)	431,445	581,145	1.347	0.816
Volume(Quantity)	78,315,863	86,118,335	1.100	

(13) Import of Animal Fat (17)

CAPMAS Code: 15 (Animal, vegetable fats and oils, cleavage products, etc)
Method: GDP Elasticity
Growth Ratio (2022/2005): 3.109 * 0.982 = 3.053

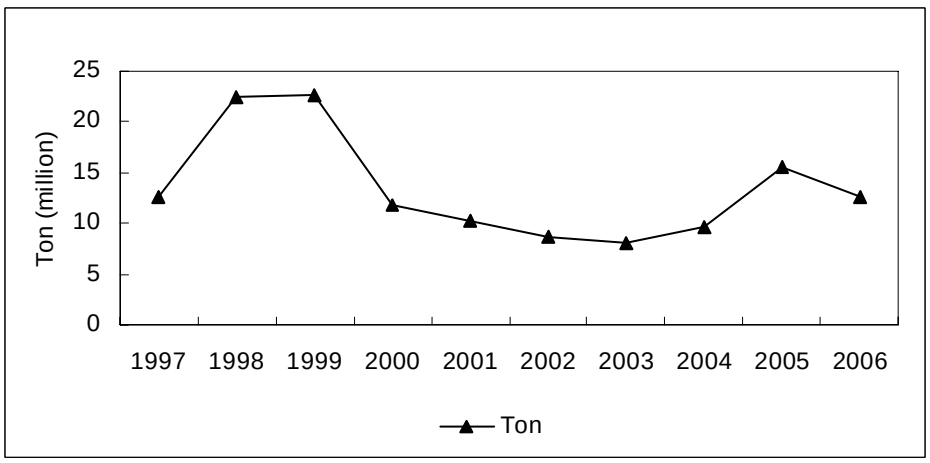


Source: CAPMAS database

	1997	2006	2006/1997	Elasticity
GDP (mil LE)	385,517	581,145	1.507	0.982
Volume (ton)	816,263	1,208,264	1.480	

(14) Import of Others (18)

CAPMAS Code:
Method: Regression Analysis (2002 - 2006)
Growth Ratio (2022/2005): 38.5/10.9 = 3.53



Source: CAPMAS database

Y (million ton) =24.3 ln (GDP (mil LE)) – 310 (R2=0.92)
2005: Y = 24.3 ln(543,634) – 310 = 10.9
2022: Y = 23.3 ln(1,690,160) – 310 = 38.5

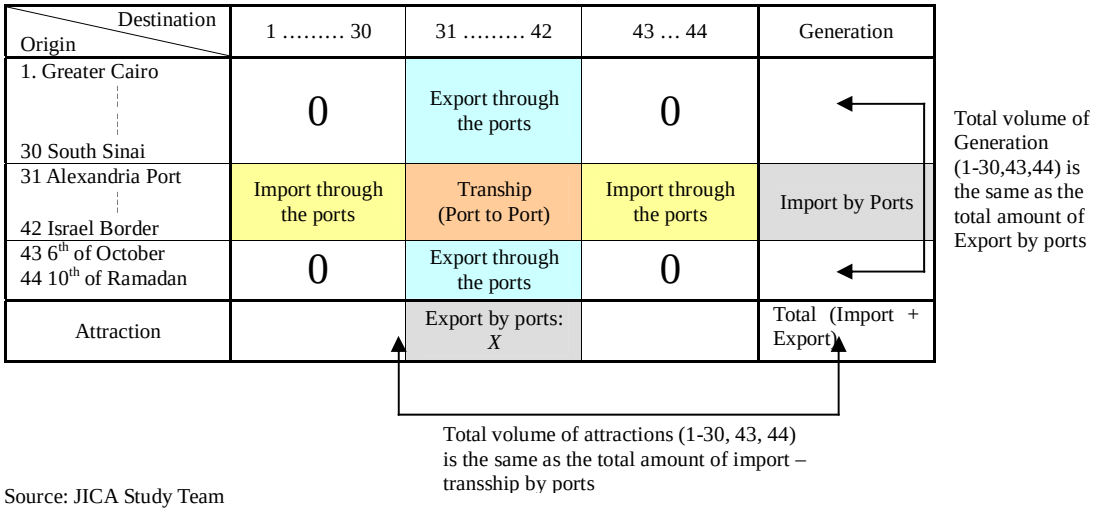
3. Origin - Destination (OD) Matrices of Export and Import in Egypt

3.1 Structure of OD Matrices

Freight movement for export and import in Egypt was analyzed and compiled into OD matrices by commodity type. The OD matrices represent the amount of transport volume related to the export and import in Egypt, and freight movement between Egypt and other countries are not included. The OD matrices consist of the following three parts:

1) Export: From origins in Egypt to ports and borders for export
2) Import: From ports and borders to destinations in Egypt for import
3) Port to port: freight movement of export or import among ports and borders

The figure below illustrates the structure of the OD matrices. The numbers from 1 to 30, 43, and 44 indicate the zone number of origins and destinations in Egypt, while the numbers from 31 to 42 indicate that of ports and borders. The zone number 39 represents Cairo Airport.



Source: JICA Study Team

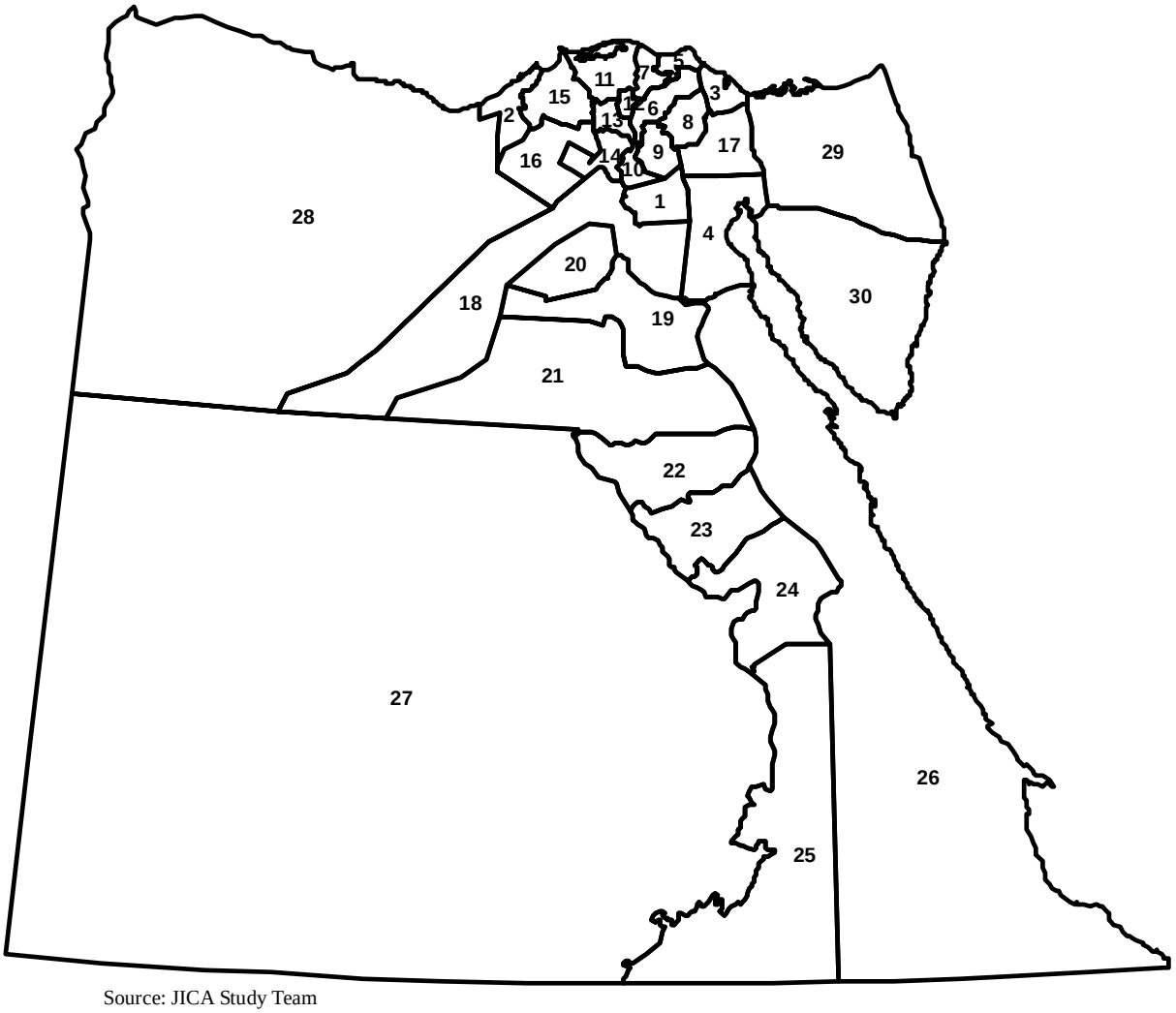
Figure A3.1.1 Structure of OD matrix for the JICA Study

For the origins and destinations, the zoning system in "The Study on the Transportation System and the National Road Transport Master Plan, 1999" was applied. The zoning system consisted of 30 zones covering Egypt's region and 12 zones for ports and borders. In the JICA Study, two zones were added for 6th of October and 10th of Ramadan (43 and 44). The list of zones is shown in Table A3.1.1, while the location of zones (1 – 30) is illustrated in Figure A3.1.2.

Table A3.1.1 Zoning System

Code	Zone	Code	Zone	Code	Zone	Code	Zone
1	Greater Cairo	12	Gharbia (North)	23	Suhag	34	Suez+Adabia Port
2	Alexandria	13	Gharbia (South)	24	Qena (include Luxor)	35	Sokhna Port
3	Port Said	14	Menoufia	25	Aswan	36	Alarish Port
4	Suez	15	Behera (North)	26	Red Sea	37	Safaga Port
5	Damietta	16	Behera (South)	27	ElWdi ElGidid	38	Nuwaiba+others
6	Dakahlia (East)	17	Ismailia	28	Matrouh	39	Cairo Airport
7	Dakahlia (West)	18	Giza (Rural)	29	North Sinai	40	Sudan border
8	Sharkia (North)	19	Beni-Suef	30	South Sinai	41	Libya border
9	Sharkia (South)	20	Fayoum	31	Alexandria+El-Dekheila	42	Israel border
10	Kalyoubia (Rural)	21	Menia	32	Damietta Port	43	6th of October
11	Kafr-El-Sheikh	22	Asyut	33	Port Said (E+W)	44	10th of Ramadan

Source: JICA Study Team

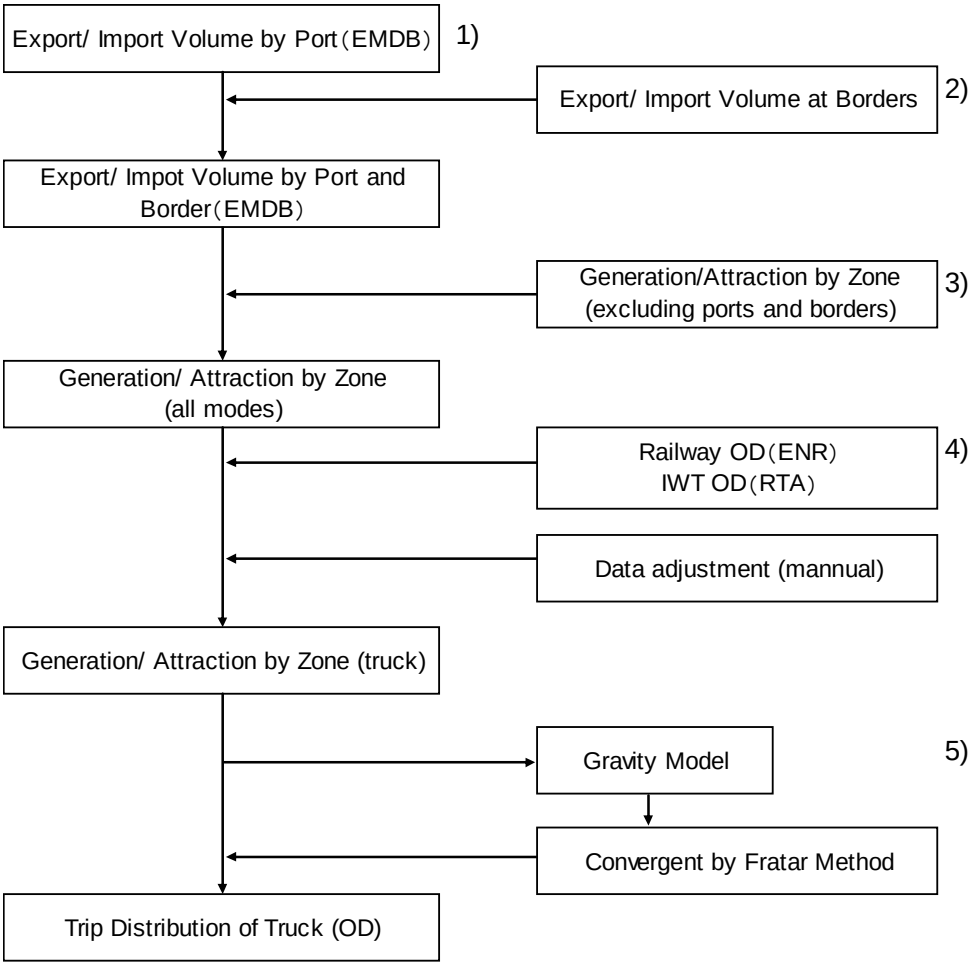


Source: JICA Study Team

Figure A3.1.2 Zoning in Egypt (1 - 30)

3.2 Methodology

The OD matrices of railway and inland waterway were compiled from the freight movement data provided by Egypt National Railways (ENR) and River Transport Authority (RTA), respectively. The OD matrices of truck for export and import were not present in Egypt. Furthermore, there was no available data that could identify the origins of exported commodities and destinations of imported commodities in Egypt. With limited data sources, the JICA Study estimated the OD matrices of truck in accordance with the flowchart below.



The following is the explanation of the steps in the flowchart.

1) Export and import volumes by commodity type at the major ports were estimated based on the data in "Statistical Yearbook 2005, EMDB", as described in Chapter 3 (3.3.2).

2) Export and import volumes by commodity type at borders were estimated as follows:
Volume at border *i* (*i* = 39 - 42) =

$$\text{Total volume at ports (EMDB)} \times \frac{\text{Volume of border } i \text{ (CAPMAS)}}{\text{Total volume at ports (CAPMAS)}}$$

3) Export and import volumes by commodity type by truck in each origin and destination zone were estimated by identifying the major production area and consumption area.

4) From the volumes at the major ports and borders mentioned above, export and import volumes by rail and inland waterway were subtracted in order to obtain the OD matrices of truck. There were some commodities whose volumes by rail or inland waterway exceeded the total volume of all modes by port due to the inconsistency of data sources among EMDB, ENR, and RTA. In such case, assuming that the data of ENR or RTA was correct, the total volume at the port where the volume is less than that by rail or inland waterway was increased by transferring the volume from other ports so that the total volume of all modes exceeded the volume by the individual mode.

5) Transport volumes between the major ports and origin/destination in Egypt were estimated from the estimated volume at the major ports and the origin/destination zones by applying the gravity model, which is popular technique to estimate the distribution among zones.

3.3 Origin of Export and Destination of Import

In the methodology mentioned above, 3) export and import volumes by commodity type in each origin and destination zone were estimated as follows.

Production and consumption data by commodity type in each zone were obtained from "A Study on the Development of the Master Plan for Freight Organization at National Level (Technical Consultation Bureau, June 2005)". They were OD matrices of 17 zones for internal freight movement in Egypt. The obtained production data included not only volume for export but also that for domestic consumption, while the obtained consumption data included not only volume from import but also that from domestic production. Therefore, it was necessary to separate the production and attraction data into the domestic freight and the international freight for export and import.

Export and import volumes were estimated from the balance of the production and consumption of each zone. The process of calculating the export volumes was:

(1) The zones where production exceeded consumption were selected.

(2) The total of (production minus consumption) was calculated for the all selected zones.

(3) The ratio of (production minus consumption) in each zone to the total was calculated.

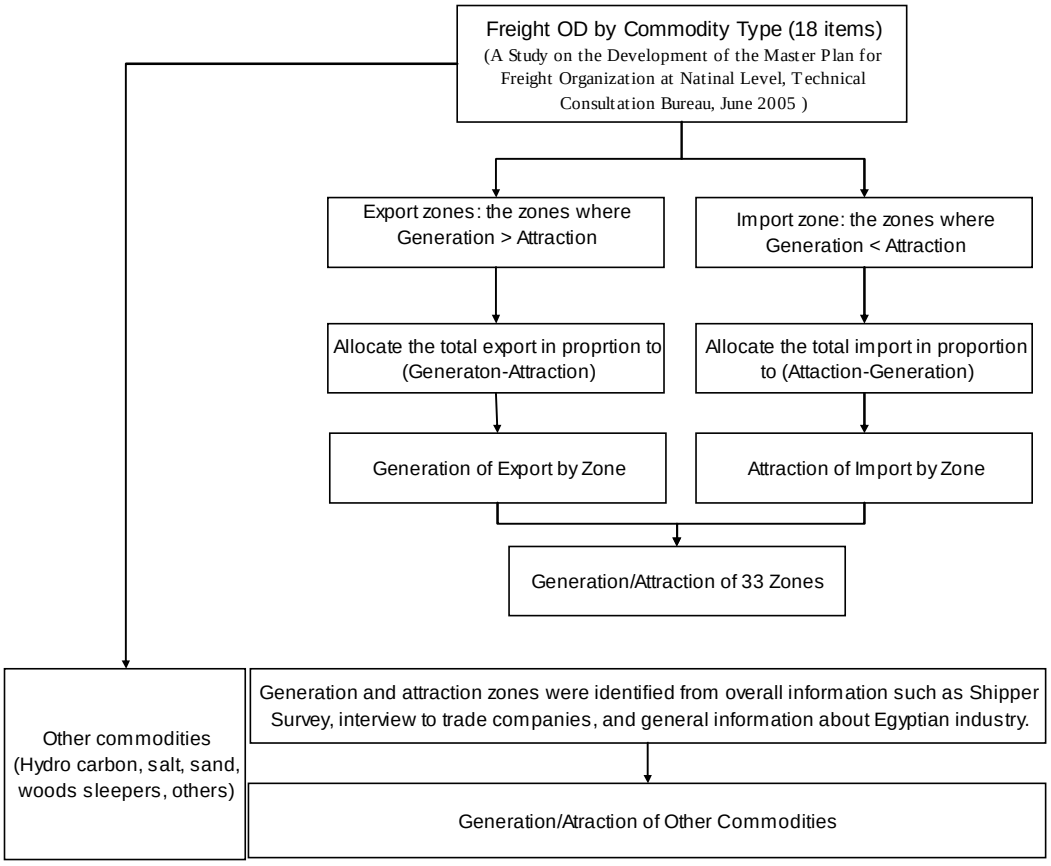
(4) The export volume from each zone was calculated by multiplying the total export volume by the calculated ratio of each zone.

The import volume to each zone was calculated as the same method. Since the zoning system of the above data (17 zones) was different from the zoning system of the JICA Study (32 zones for production and consumption area and 12 zones for sea ports and borders), the estimated volumes were divided into 32 zones in proportion to population or zone area.

The production and consumption data were not available for the commodity types of No 2, 5, 7, 13, and 18 (Refer to Table A3.1.1 for the number of commodity types). For these types, the above-mentioned method could not be applied, and it was no way to estimate the production and consumption in each zone. Therefore, it was inevitable to *guess* the origin and destination zone from the limited information such as the result of Shipper Survey, hearing from trading companies and industrial specialists, internet web-sites, and so on. After identifying the origin and destination zones, the ranking in the volume of export and import

was also *guessed* in the same way. The share of each zone to the total export or import volumes was calculated based on the ranking by assuming the percentage of each rank.

The flowchart for estimating export and import volume by zone are illustrated below.



The result of the estimation is summarized in Table A3.3.1. It should be pointed out that the estimation had to involve so many assumptions that the accuracy of the result is not good.

Table A3.3.1 Volume of Export and Import from/to Zones by Truck in 2005

Transport Volume of Exported Commodities from Zones **Unit: Tons**

Zone	Commodity Code										Total
	1	2	3	4	5	6	7	8	9	18	
1	0	665,701	32,049	0	23,911	0	18,780	16,959	1,836	1,540,962	2,300,198
2	0	426,159	18,774	287,321	124,071	0	49,150	88,005	142,782	770,482	1,906,744
3	0	0	0	0	0	0	0	0	0	770,479	770,479
4	3,369,096	298,484	0	1,067,628	922,257	0	772,706	654,178	23,738	770,481	7,878,568
5	0	0	0	0	122,978	34,523	96,594	87,236	0	770,482	1,111,813
6	0	0	0	0	0	197,987	0	0	0	13,931	211,918
7	0	0	0	0	61,489	197,986	48,296	43,617	0	5,970	357,358
8	0	0	0	0	0	96,096	0	0	0	8,210	104,306
9	0	746,214	0	0	0	96,319	0	0	0	385,242	1,227,775
10	0	0	0	0	0	0	0	0	0	4,943	4,943
11	0	2,588	380	0	0	249,090	0	0	0	10,452	262,510
12	0	0	0	0	0	32,479	0	0	0	4,757	37,236
13	0	0	0	0	0	32,677	0	0	33	11,098	43,808
14	0	0	0	0	95	0	75	67	0	13,036	13,273
15	0	0	0	0	0	74,706	0	0	198,222	15,151	288,079
16	0	0	0	0	0	74,677	0	0	198,870	385,242	658,789
17	0	0	0	0	0	0	0	0	0	3,483	3,483
18	0	0	0	0	0	0	0	0	0	13,885	13,885
19	828,712	0	0	0	0	0	0	0	0	770,482	1,599,194
20	0	0	0	0	0	0	0	0	0	385,240	385,240
21	0	0	0	0	0	0	0	0	0	385,239	385,239
22	1,331,161	0	0	0	0	0	0	0	0	770,482	2,101,643
23	0	0	0	0	0	0	0	0	0	385,240	385,240
24	175,548	0	0	0	0	0	0	0	0	770,481	946,029
25	0	0	972,895	0	0	0	0	0	0	385,241	1,358,136
26	0	0	0	0	0	0	0	0	0	750	750
27	0	0	0	0	0	0	0	0	0	685	685
28	977,210	0	0	0	0	0	0	0	0	1,089	978,299
29	528,523	0	0	0	0	0	0	0	0	1,248	529,771
30	0	0	0	0	0	0	0	0	0	264	264
43	1,009,326	596,972	0	0	0	280	0	0	0	770,481	2,377,059
44	0	746,216	0	510	0	280	0	0	1,617	770,482	1,519,105
Total	8,219,576	3,482,334	1,024,098	1,355,459	1,254,801	1,087,100	985,601	890,062	567,098	10,895,690	29,761,819

Transport Volume of Imported Commodities to Zones **Unit: Tons**

Zone	Commodity Code										Total
	2	10	11	12	13	14	15	16	17	18	
1	183,049	2,384,914	1,557,527	380,074	72,974	1,013,715	112,226	582,768	262,628	2,113,527	8,663,402
2	822,048	151,212	593,336	2,898,228	400,293	874,361	194,730	0	0	1,056,764	6,990,972
3	0	0	0	0	142,298	35,214	150,429	4,512	17,074	1,056,764	1,406,291
4	78,406	0	71,792	0	0	70,430	0	0	0	1,056,763	1,277,391
5	0	0	167,052	375,068	0	70,427	0	150,925	46,203	1,056,764	1,866,439
6	0	63,263	257,421	0	0	35,213	52,776	52,056	28,875	19,109	508,713
7	21	63,807	258,290	250,123	0	0	53,384	52,055	29,126	8,190	714,996
8	0	13,422	133,713	0	0	0	266,916	31,275	0	11,260	456,586
9	196,016	13,423	133,714	0	0	0	266,918	31,272	0	528,382	1,169,725
10	0	84,711	437,727	0	0	0	37,005	76,820	95,662	6,781	738,706
11	535	0	287,761	2,087	0	0	0	29,383	79,592	14,333	413,691
12	0	148,519	117,164	0	0	0	101,306	42,400	0	6,523	415,912
13	0	149,509	117,854	0	0	13,586	101,308	42,399	0	15,221	439,877
14	32	258,233	203	124	0	35,215	0	35,787	92,899	17,880	440,373
15	0	44,666	0	0	840,777	35,217	0	0	75,322	20,781	1,016,763
16	0	44,665	0	0	0	0	0	0	77,832	528,382	650,879
17	0	50,057	27,893	0	116,773	0	0	71,154	33,395	4,777	304,049
18	0	463,547	322,205	0	467,097	35,215	0	87,735	44,190	19,043	1,439,032
19	0	45,105	0	0	0	0	0	52,683	42,433	1,056,762	1,196,983
20	0	0	41,839	0	0	0	0	31,275	34,649	528,382	636,145
21	0	83,390	0	0	0	35,214	0	112,817	88,881	528,381	848,683
22	0	122,005	0	0	0	0	0	56,775	33,645	1,056,764	1,269,189
23	0	122,003	0	0	0	35,216	15,166	41,978	49,965	528,382	792,710
24	0	266,110	343,434	0	0	35,214	0	70,419	70,804	1,056,764	1,842,745
25	0	140,374	146,528	0	0	0	0	62,966	25,109	528,381	903,358
26	0	0	26,123	0	0	35,216	0	19,414	3,515	1,032	85,300
27	0	0	25,339	0	0	0	0	0	3,767	940	30,046
28	0	1,870	34,569	0	0	0	0	630	7,782	1,494	46,345
29	0	47,746	51,757	0	0	35,216	0	6,822	9,792	1,712	153,045
30	0	10,119	11,000	0	0	0	0	11,859	2,010	360	35,348
43	156,813	84,293	58,585	125,016	2,334	35,216	12,132	15,952	8,034	1,056,765	1,555,140
44	209,615	93,602	59,578	553,069	9,342	35,215	357,909	41,664	50,217	1,056,763	2,466,974
Total	1,646,535	4,950,565	5,282,404	4,583,789	2,051,888	2,465,100	1,722,205	1,815,795	1,313,401	14,944,126	40,775,808

Note: The export and import volumes are included 125 and 1,210 thousand tons to/from Cairo, Airport, Sudan border, Libya border and Israel border, respectively.

Source: Estimation by JICA Study Team

3.4 Current OD Matrices

As mentioned above, OD matrices of railway and inland waterway were prepared from the existing data of ENR and RTA, while only generation and attraction volumes were estimated for truck. To make OD matrices by truck, the gravity model was applied for every commodity types. The following gravity model was applied.

$$Xij = Ui * Vj / Tij$$

where,
Xij: i zone → j zone volume
Ui: Generation from i zone
Vj: Attraction to j zone
Tij: The Shortest Distance between i and j zone

The shortest distance between zones for T*ij* was calculated from the GIS data that was used in the JICA Study. Major cities were chosen as the center of each zone. The network data are stored in the submitted CD (The Demand Assignment System for Export and Import Freight Volume).

The Gravity model does not assure that the sum of X*ij* for row and column equal to U*i* and V*j*, respectively. Therefore, the Fratar method was applied to the calculated X*ij* so that the sum of each row and column became equal to generation and attraction of each zone. Note that minor errors remain between the totals due to the nature of the Fratar method which involves calculation of convergence.

The result of the estimation of the current OD matrices consists of 54 matrices (3 modes * 18 commodity types = 54), which are stored in the submitted CD. The current OD matrices by mode are shown in Table A3.4.1, A3.4.2, and A3.4.3.

Table A3.4.1 Present OD (Truck)

2005 Truck (1/2) **Unit: ton**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	5,329,399	6,341,638	399,907	187,371	216,227	268,378	231,859	304,442	719,542	496,970	287,883	285,872	324,034	317,903	782,447	562,534	133,098	900,876	832,209	443,457	560,699	877,361	518,125	1,066,830	565,168	22,650	18,708	36,063	75,635
32	1,779,719	369,588	410,062	85,653	1,573,159	177,116	389,904	87,342	266,163	161,913	90,376	94,832	80,221	77,740	138,409	47,446	81,561	284,269	184,350	99,837	129,723	192,350	115,144	261,445	136,891	9,707	6,086	6,548	42,222
33	306,458	88,223	501,962	15,265	38,829	34,103	56,695	29,631	43,939	35,142	18,932	16,929	14,574	7,847	8,278	3,101	19,319	35,614	12,544	8,779	13,155	12,415	9,381	30,181	15,539	2,409	1,516	1,494	9,958
34	382,128	41,879	64,755	916,370	16,017	6,824	9,311	19,853	87,832	15,178	6,243	5,137	5,097	12,408	71,969	23,849	50,330	118,295	92,886	46,374	53,580	81,452	45,362	101,125	46,422	880	625	647	2,460
35	121,551	10,788	18,296	39,567	5,684	393	1,081	326	26,170	196	240	122	282	466	190	9,126	236	721	43,570	20,865	20,093	37,899	18,412	47,288	21,710	62	34	27	70
36	1,795	503	2	38	61	71	150	47	46	125	46	54	50	68	9	6	67	252	28	19	61	51	49	156	96	10	7	6	2,932
37	343,249	88,025	4,341	10,981	7,346	10,740	20,160	10,065	14,588	19,260	7,010	8,501	8,916	11,465	6,211	2,475	7,200	61,330	10,836	6,177	22,631	38,379	48,390	278,382	83,102	29,264	3,026	1,415	7,927
38	17,640	2,920	3,937	1,902	1,240	383	529	765	4,613	655	323	276	285	510	2,625	1,583	1,032	4,878	6,683	3,151	4,381	8,507	4,786	9,928	5,451	68	44	46	181
39	20,918	288	966	774	346	33	44	33	2,068	25	16	10	27	51	14	731	12	42	3,238	1,633	1,189	2,032	945	1,652	805	3	0	1	3
40	357,323	42,558	1,808	19,392	7,350	10,651	4,811	4,075	4,166	9,229	2,617	4,173	6,383	11,892	5,204	0	10,835	30,805	10,533	5,802	43,074	18,608	32,039	45,611	28,079	20,242	0	98	11,657
41	2,910	4,272	119	75	162	21	411	7	551	13	5	6	8	23	820	28	135	1,088	106	51	97	135	77	147	95	5	0	0	0
42	312	290	136	3	18	0	41	0	47	0	0	0	0	0	587	0	224	862	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	8,663,402	6,990,972	1,406,291	1,277,391	1,866,439	508,713	714,996	456,586	1,169,725	738,706	413,691	415,912	439,877	440,373	1,016,763	650,879	304,049	1,439,032	1,196,983	636,145	848,683	1,269,189	792,710	1,842,745	903,358	85,300	30,046	46,345	153,045

2005 Truck (2/2) **Unit: ton**

	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	TOTAL
1	51	1,099,427	679,070	46,514	115,128	191,538	10,996	16,595	79,269	18,795	2,395	15,287	25,133	0	0	2,300,198
2	4	1,759,635	100,998	9,038	7,525	6,596	3,704	4,755	10,619	226	1,036	1,579	1,029	0	0	1,906,744
3	9	59,285	318,659	347,192	12,529	17,454	11	1,249	11,777	465	62	1,325	462	0	0	770,479
4	10	2,231,693	1,372,627	127,177	1,857,826	873,114	442,022	456,570	427,399	820	37,175	10,281	41,854	0	0	7,878,568
5	3	45,688	1,022,015	10,440	4,682	4,505	9,022	5,217	8,608	152	404	630	447	0	0	1,111,813
6	0	49,329	68,159	4,790	28,100	581	23,375	18,565	16,069	334	531	1,920	165	0	0	211,918
7	0	75,596	172,539	7,175	21,979	162	32,080	22,952	21,101	226	1,113	1,790	645	0	0	357,358
8	0	22,767	24,333	1,929	18,887	533	14,593	10,290	9,352	253	287	978	104	0	0	104,306
9	12	795,363	257,409	16,744	40,026	28,751	13,687	13,265	25,091	2,080	1,637	7,497	26,213	0	0	1,227,775
10	0	1,649	2,323	131	222	353	0	21	190	24	0	25	5	0	0	4,943
11	0	96,989	55,056	4,070	31,262	464	27,396	23,386	19,825	334	695	2,795	238	0	0	262,510
12	0	10,821	10,767	722	4,550	208	3,793	3,105	2,742	57	86	355	30	0	0	37,236
13	0	15,086	12,152	794	4,819	549	3,606	3,279	2,903	88	97	402	33	0	0	43,808
14	0	4,735	5,977	326	562	904	32	76	521	51	0	73	16	0	0	13,273
15	0	105,932	111,955	18,075	18,646	523	5,893	9,895	13,516	128	2,128	1,121	267	0	0	288,079
16	7	298,136	201,992	24,371	43,700	24,579	7,426	16,667	32,318	1,157	3,370	4,324	742	0	0	658,789
17	0	686	1,775	191	286	323	0	17	173	10	0	17	5	0	0	3,483
18	0	4,581	5,689	353	754	1,332	0	111	867	40	0	135	23	0	0	13,885
19	33	504,208	547,977	34,362	60,873	203,410	49,832	62,690	112,606	3,060	6,542	7,736	5,865	0	0	1,599,194
20	20	126,942	156,570	9,767	22,528	40,291	15	2,722	20,883	1,568	131	3,211	592	0	0	385,240
21	15	123,386	155,842	10,141	21,437	37,894	11	4,657	25,859	1,116	224	3,980	677	0	0	385,239
22	39	607,959	640,976	39,552	59,205	222,029	79,942	232,308	178,305	1,893	19,671	10,816	8,948	0	0	2,101,643
23	22	121,235	152,548	9,889	19,654	34,376	16	11,611	29,215	877	401	4,668	728	0	0	385,240
24	49	249,858	313,674	21,415	46,659	103,188	8,212	113,916	71,998	1,469	4,191	9,199	2,201	0	0	946,029
25	35	370,591	392,480	24,096	151,117	162,512	107,497	13,002	106,048	722	13,172	7,615	9,249	0	0	1,358,136
26	0	188	276	21	51	97	0	74	43	0	0	0	0	0	0	750
27	0	216	280	18	36	58	0	15	62	0	0	0	0	0	0	685
28	0	452,720	237,940	12,662	9,986	79,262	45,263	55,646	68,313	2	7,291	4,959	4,255	0	0	978,299
29	0	27,315	40,943	2,916	1,432	10,927	421,271	7,353	10,419	2	847	140	6,206	0	0	529,771
30	0	65	105	7	14	20	0	0	53	0	0	0	0	0	0	264
31	20,371	0	1,236	66	87	147	0	13	111	5	1	30	10	991,633	1,262,329	25,383,324
32	7,163	391	0	64	29	42	0	3	32	1	0	5	7	291,237	574,699	8,253,449
33	1,696	38	54	0	2	3	0	0	2	0	0	0	2	37,624	145,969	1,577,602
34	487	101	105	9	0	77	0	2	14	1	0	2	3	119,191	274,040	2,719,320
35	3	43	42	3	21	0	0	1	6	0	0	1	1	56,110	72,806	574,502
36	13	0	0	0	0	0	0	0	0	0	0	0	0	167	616	7,601
37	2,042	11	6	0	1	2	0	0	1	0	0	0	0	34,517	99,044	1,307,016
38	129	9	8	1	1	2	0	0	0	0	0	0	0	6,635	10,368	106,475
39	0	2	2	0	0	1	0	0	0	0	0	0	0	5,137	8,562	51,603
40	3,084	0	0	0	0	0	0	0	0	0	0	0	0	11,580	15,540	779,219
41	0	3	0	0	0	0	0	0	0	0	0	0	0	1,236	2,695	15,301
42	0	0	0	0	0	0	0	0	0	0	0	0	0	73	306	2,899
43	23	1,139,518	631,544	37,905	65,021	238,412	53,670	61,500	103,134	4,884	7,116	10,774	23,558	0	0	2,377,059
44	28	863,575	378,096	31,497	64,819	86,298	66	5,492	37,743	6,862	1,796	10,136	32,697	0	0	1,519,105
TOTAL	35,348	11,265,772	8,074,199	854,423	2,734,456	2,371,517	1,363,431	1,177,020	1,447,187	47,702	112,399	123,806	192,410	1,555,140	2,466,974	70,540,130

Table A3.4.2 Present OD (Railway)

2005 Railway (1/2) **Unit: ton**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	162,310	13,068	0	0	0	5,400	0	2,293	0	810	26,910	24,105	0	365	14,035	389	30,491	1,821,633	30,048	4,477	23,274	30,488	27,205	175,118	46,017	5,295	0	87,460	187
32	479,180	20,260	0	0	0	0	0	0	0	0	24,570	60,450	0	0	0	0	0	0	20,280	12,480	9,360	12,415	47,970	15,405	0	0	0	0	0
33	63,864	2,400	0	0	0	0	0	0	0	0	12,285	75,085	0	0	0	0	50	0	36,162	41,079	0	20,331	12,415	9,380	0	0	0	0	0
34	74,775	17,680	0	0	0	0	104,677	7,981	0	0	24,100	42,690	0	0	2,340	0	1,314	0	19,045	33,236	45,590	6,550	57,062	118,639	81,656	270	0	8,800	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	780,129	53,408	0	0	0	5,400	104,677	10,274	0	810	87,865	202,330	0	365	16,375	389	31,855	1,821,633	105,535	91,272	78,224	69,784	144,652	318,542	127,673	5,565	0	96,260	187

2005 Railway (2/2) **Unit: ton**

	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	TOTAL
1	0	28,277	0	1,800	1,270	0	0	0	0	0	0	0	0	0	0	31,347
2	0	0	0	0	87	0	0	0	0	0	0	0	0	0	0	87
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	400	0	0	0	0	0	0	0	0	0	0	0	0	400
8	0	967	0	0	110	0	0	0	0	0	0	0	0	0	0	1,077
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	735	0	0	0	0	0	0	0	0	0	0	0	0	0	735
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	220	50	0	4,360	0	0	0	0	0	0	0	0	0	0	4,630
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	165	0	0	0	0	0	0	0	0	0	0	0	0	0	165
15	0	0	0	0	3,120	0	0	0	0	0	0	0	0	0	0	3,120
16	0	0	0	0	120	0	0	0	0	0	0	0	0	0	0	120
17	0	2,645	0	890	170	0	0	0	0	0	0	0	0	0	0	3,705
18	0	217,484	0	0	0	0	0	0	0	0	0	0	0	0	0	217,484
19	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	23
20	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	30
21	0	5,050	0	0	0	0	0	0	0	0	0	0	0	0	0	5,050
22	0	713	4,700	0	0	0	0	0	0	0	0	0	0	0	0	5,413
23	0	7,020	0	0	0	0	0	0	0	0	0	0	0	0	0	7,020
24	0	33,000	0	0	0	0	0	35,829	0	0	0	0	0	0	0	68,829
25	0	25,600	0	0	30,600	0	0	761,520	0	0	0	0	0	0	0	817,720
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	4,210	1,500	0	0	0	0	0	0	0	0	0	0	0	0	5,710
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	3,700	111,995	15	149,175	0	0	0	0	0	0	0	0	0	2,796,263
32	0	5,460	0	17,940	0	0	0	0	0	0	0	0	0	0	0	725,770
33	0	111,845	2,220	0	0	77,015	0	0	0	0	0	0	0	0	0	464,131
34	0	12,420	27,958	0	0	0	0	0	0	0	0	0	0	0	0	686,783
35	0	163,814	2,300	84,460	0	0	0	0	0	0	0	0	0	0	0	250,574
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	840	0	0	0	0	0	0	0	0	0	0	0	0	0	840
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	620,518	42,828	217,085	39,852	226,190	0	797,349	0	0	0	0	0	0	0	6,097,026

Table A3.4.3 Present OD (Inland Waterway)

2005 Inland Waterway Transport **Unit: ton**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	TOTAL
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21,441	0	0	0	0	0	0	0	0	0	0	0	0	21,441
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272	0	0	0	0	0	0	0	0	0	0	0	0	0	272
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22,457	0	0	0	0	0	0	0	0	0	0	0	0	0	22,457
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,550	0	0	0	0	0	0	0	0	0	0	0	0	0	1,550
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	11,166	153,861	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,110	0	12,630	15,895	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198,662
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	11,166	153,861	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,110	0	12,630	15,895	0	0	0	0	0	45,720	0	0	0	0	0	0	0	0	0	0	0	0	244,382

3.5 Future OD Matrices

The OD matrices in 2022 were calculated by multiplying the current OD matrices by the growth rates (Table 3.3.11 in Chapter 3) for every commodity types. The calculated OD matrices reflected the future demand of each commodity type. On the other hand, it was necessary to incorporate development impact of 6th of October and 10th of Ramadan because these developments were expected to be large. Therefore, the additional rates (expansion rates) were applied to the calculated OD matrices for these industrial zones. The forecast of the total production in these industrial zones are presented in Chapter 3 (3.1). Table A3.5.1 below shows the forecast of the expansion rate by commodity type between 2005 and 2022. The expansion rates were calculated from the percentages in the table.

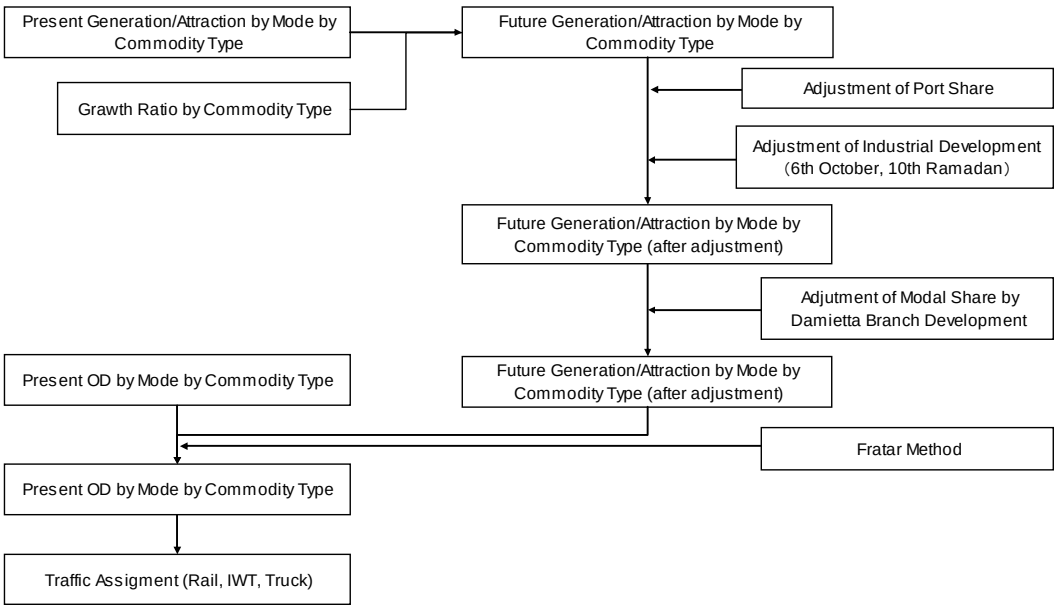
Table A3.5.1 Expansion Rate

Commodity	6th October (43 zone)	10th Ramadan (44 zone)
Construction Materials	1.040	1.011
Basic Chemicals	1.108	1.030
Steel & Iron Ore	-	1.012
Others	1.323	1.090

Source: JICA Study Team

As described in Chapter 3, cargo volumes at major ports were adjusted so that the port shares became the same as the shares in 2006. In addition, the modal share along Damietta branch was assumed to be the same as that of the inland waterway between Alexandria Port and Upper Egypt as described in Chapter 3.

The flowchart below shows the process for estimating the future OD matrices.



The all OD matrices are stored in the submitted CD (The Demand Assignment System for Export and Import Freight Volume).

Table A3.5.2 Future OD (Truck)

2022 Truck (1/2) **Unit: ton**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	7,042,419	15,053,239	516,092	156,340	336,889	309,202	246,946	411,182	1,158,163	604,252	381,123	355,373	431,306	434,164	1,490,276	1,434,788	163,056	1,014,231	1,670,857	889,271	1,072,253	1,724,087	952,241	1,635,002
32	5,154,560	2,682,630	1,179,534	175,175	5,312,302	407,397	1,008,950	218,560	892,100	379,209	230,676	220,191	207,436	226,034	654,538	267,064	213,408	741,040	811,262	433,322	535,941	828,612	462,245	838,050
33	1,433,674	1,005,848	2,495,958	53,317	193,020	133,204	243,072	165,342	242,759	133,663	72,074	83,702	76,792	45,914	86,116	31,015	93,015	154,604	99,522	57,875	91,628	96,583	66,152	130,310
34	2,794,379	581,685	356,927	3,624,278	119,784	41,004	51,361	107,857	650,573	95,570	46,079	29,029	32,374	83,456	591,638	276,167	234,856	665,946	871,800	436,129	476,028	779,017	411,765	858,343
35	1,261,440	224,552	143,226	189,903	54,161	4,637	9,742	3,740	260,765	2,432	3,255	1,554	3,806	5,968	3,119	139,227	2,241	8,606	506,523	246,375	236,845	449,093	217,210	512,382
36	7,668	5,998	7	146	299	256	679	171	171	473	173	202	202	281	55	22	289	903	143	90	308	190	173	394
37	1,560,096	1,022,438	17,325	42,610	36,382	42,440	90,279	44,375	69,707	76,520	28,401	35,198	40,050	51,382	47,155	17,431	31,374	246,769	67,986	36,570	127,590	202,908	226,940	949,731
38	103,529	34,565	17,988	5,674	7,162	1,990	2,574	3,981	27,300	3,559	2,070	1,414	1,640	3,156	20,843	14,570	4,644	25,805	47,640	22,699	31,084	61,571	33,929	64,201
39	71,632	1,927	2,360	1,178	1,035	123	140	119	7,420	98	71	40	114	205	72	3,481	35	157	11,749	6,019	4,376	7,515	3,480	5,588
40	1,107,623	239,738	3,113	49,243	18,845	31,930	14,399	13,283	13,820	32,284	9,565	14,225	21,869	38,993	20,056	0	32,084	99,810	35,497	19,796	135,779	57,588	91,446	118,941
41	6,618	22,489	214	105	377	59	935	22	1,043	44	17	19	28	70	3,055	132	288	2,807	375	182	334	483	274	480
42	768	1,707	224	3	46	0	105	0	104	0	0	0	0	0	2,321	0	492	2,343	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	20,544,406	20,876,816	4,732,968	4,297,972	6,080,302	972,242	1,669,182	968,632	3,323,925	1,328,104	773,504	740,947	815,617	889,623	2,919,244	2,183,897	775,782	2,963,021	4,123,354	2,148,328	2,712,166	4,207,647	2,465,855	5,113,422

2022 Truck (2/2) **Unit: ton**

	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	TOTAL
1	0	0	0	0	0	0	3,045,236	1,656,136	416,942	345,908	395,862	24,626	44,711	227,856	53,877	6,260	41,981	67,489	0	0	6,326,884
2	0	0	0	0	0	0	4,831,957	299,314	92,675	29,175	13,272	8,275	15,181	35,371	653	4,206	4,499	2,845	0	0	5,337,423
3	0	0	0	0	0	0	86,255	399,400	1,624,834	19,139	18,225	17	1,878	17,366	670	90	1,850	667	0	0	2,170,391
4	0	0	0	0	0	0	5,171,901	2,653,628	699,429	4,578,402	1,448,136	994,980	1,025,775	968,546	2,265	80,467	24,229	98,652	0	0	17,746,410
5	0	0	0	0	0	0	129,526	2,605,553	92,312	15,488	10,253	23,843	14,180	24,666	479	1,006	1,873	1,174	0	0	2,920,353
6	0	0	0	0	0	0	145,797	173,198	34,354	86,384	1,208	71,820	57,053	49,329	980	1,560	5,637	483	0	0	627,803
7	0	0	0	0	0	0	198,820	389,042	45,954	68,765	348	91,070	66,312	59,997	679	2,847	5,251	1,546	0	0	930,631
8	0	0	0	0	0	0	66,569	61,157	13,889	57,457	1,100	44,371	31,293	28,399	735	835	2,840	302	0	0	308,947
9	0	0	0	0	0	0	2,178,161	636,484	139,700	121,669	59,672	41,628	40,099	74,545	5,969	4,522	20,599	70,428	0	0	3,393,476
10	0	0	0	0	0	0	4,758	5,774	1,212	673	731	0	63	555	69	0	69	14	0	0	13,918
11	0	0	0	0	0	0	285,146	139,422	28,801	95,781	947	83,892	71,646	60,678	978	2,035	8,182	683	0	0	778,191
12	0	0	0	0	0	0	31,892	27,254	5,326	13,965	432	11,638	9,528	8,396	167	252	1,039	87	0	0	109,976
13	0	0	0	0	0	0	44,235	30,592	6,176	14,753	1,137	11,039	10,038	8,842	255	284	1,170	96	0	0	128,617
14	0	0	0	0	0	0	13,584	14,828	3,020	1,704	1,874	72	216	1,525	146	0	202	46	0	0	37,217
15	0	0	0	0	0	0	408,833	443,236	200,000	79,078	1,071	18,060	38,146	57,863	426	9,802	3,818	1,173	0	0	1,261,506
16	0	0	0	0	0	0	945,268	646,241	256,315	168,825	50,518	22,618	62,974	120,138	3,393	15,269	12,973	2,678	0	0	2,307,210
17	0	0	0	0	0	0	1,877	4,184	1,676	821	634	0	49	480	28	0	45	13	0	0	9,807
18	0	0	0	0	0	0	13,226	14,149	3,268	2,285	2,760	0	331	2,537	114	0	374	66	0	0	39,110
19	0	0	0	0	0	0	1,273,623	1,213,440	260,399	172,854	364,426	119,490	146,488	284,425	8,746	14,403	20,815	13,707	0	0	3,892,816
20	0	0	0	0	0	0	367,282	390,226	90,636	68,431	83,663	46	8,142	61,238	4,491	378	8,913	1,698	0	0	1,085,144
21	0	0	0	0	0	0	355,426	382,451	93,694	64,831	78,340	33	13,868	75,497	3,182	642	11,000	1,934	0	0	1,080,898
22	0	0	0	0	0	0	1,484,006	1,374,898	283,100	163,323	384,506	188,823	531,007	435,912	5,389	42,517	28,652	20,319	0	0	4,942,452
23	0	0	0	0	0	0	348,252	373,321	91,108	59,272	70,868	48	34,481	85,056	2,493	1,148	12,865	2,073	0	0	1,080,985
24	0	0	0	0	0	0	694,544	750,055	189,506	139,092	203,655	19,140	287,781	200,675	4,183	9,617	25,259	5,722	0	0	2,529,229
25	0	0	0	0	0	0	884,701	822,733	164,004	356,398	278,760	241,994	38,646	260,622	2,055	28,767	19,520	20,453	0	0	3,118,653
26	0	0	0	0	0	0	538	681	193	153	200	0	219	125	0	0	0	0	0	0	2,109
27	0	0	0	0	0	0	619	691	164	109	119	0	45	180	0	0	0	0	0	0	1,927
28	0	0	0	0	0	0	971,549	443,204	63,932	21,905	124,810	106,858	124,407	152,184	6	15,582	10,641	9,194	0	0	2,044,272
29	0	0	0	0	0	0	53,401	69,599	13,562	2,911	15,663	902,223	14,916	21,114	6	1,642	283	12,180	0	0	1,107,500
30	0	0	0	0	0	0	185	256	64	42	41	0	0	153	0	0	0	0	0	0	741
31	908,505	21,854	18,318	45,837	73,280	24,448	0	251,277	49,751	21,681	25,030	0	3,210	26,712	1,144	216	6,333	1,110	2,302,549	2,027,705	45,291,712
32	460,228	21,389	11,818	16,292	95,234	17,096	151,469	0	105,130	16,055	15,944	0	1,664	17,132	478	0	2,244	1,727	1,357,882	2,155,421	28,527,439
33	71,463	8,375	4,371	5,551	37,289	6,781	19,331	44,386	0	2,244	2,192	0	0	2,167	0	0	0	646	241,530	881,554	8,613,039
34	414,711	4,851	4,021	4,953	12,930	2,524	84,078	99,523	32,382	0	61,387	0	2,447	15,762	1,004	0	2,271	1,475	1,301,801	2,016,461	18,278,626
35	245,983	590	410	394	746	28	44,424	48,010	13,059	29,517	0	0	1,264	8,260	0	0	1,173	713	778,611	741,093	6,405,077
36	279	39	21	21	10,307	49	0	0	0	0	0	0	0	0	0	0	0	0	900	3,801	34,710
37	308,821	111,335	9,466	5,590	30,718	8,443	5,945	4,393	0	803	1,281	0	0	775	0	0	0	0	200,762	585,754	6,385,743
38	36,895	324	201	322	796	580	5,533	5,634	2,420	792	1,264	0	0	0	0	0	0	0	55,630	62,496	716,475
39	2,847	10	0	5	11	0	890	767	0	0	274	0	0	0	0	0	0	0	24,770	30,010	188,518
40	81,867	46,529	0	367	32,448	9,787	0	0	0	0	0	0	0	0	0	0	0	0	36,572	47,635	2,475,132
41	317	11	0	0	0	0	473	0	0	0	0	0	0	0	0	0	0	0	2,983	6,810	51,044
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	192	889	9,194
43	0	0	0	0	0	0	3,392,312	1,666,585	339,903	230,949	490,244	134,684	153,992	298,213	18,555	17,330	35,212	67,586	0	0	6,845,565
44	0	0	0	0	0	0	2,468,539	1,005,389	296,966	212,146	192,735	204	17,410	119,175	21,140	5,113	29,090	90,522	0	0	4,458,429
TOTAL	2,531,916	215,307	48,626	79,332	293,759	69,736	30,210,161	19,147,111	5,755,856	7,263,780	4,403,582	3,161,492	2,869,460	3,812,466	144,755	266,790	350,902	499,501	6,304,182	8,559,629	193,615,299

Table A3.5.3 Future OD (Railway)

2022 Railway (1/2) **Unit: ton**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	28,364	0	0	0	0	16,883	0	0	0	2,532	18,782	11,894	0	1,141	849	1,094	117	5,693,269	72,334	3,392	3,299	41,989	10,393	9,061	0	0	0	0	584
32	1,285,975	77,529	0	0	0	0	0	0	0	0	101,846	238,874	0	0	0	0	0	0	87,870	58,578	30,670	59,823	152,399	63,151	0	0	0	0	0
33	44,402	554	0	0	0	0	0	0	0	0	13,210	76,970	0	0	0	0	2	0	40,653	50,039	0	25,417	10,226	9,971	0	0	0	0	0
34	452,291	0	0	0	0	0	306,253	8,302	0	0	46,646	118,640	0	0	38,856	0	104,722	0	47,628	93,561	204,630	33,249	215,109	404,919	216,424	18,836	0	264,309	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1,811,032	78,083	0	0	0	16,883	306,253	8,302	0	2,532	180,484	446,378	0	1,141	39,705	1,094	104,841	5,693,269	248,485	205,570	238,599	160,478	388,127	487,102	216,424	18,836	0	264,309	584

2022 Railway (2/2) **Unit: ton**

	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	TOTAL
1	0	88,466	0	3,224	1,497	0	0	0	0	0	0	0	0	0	0	93,187
2	0	0	0	0	259	0	0	0	0	0	0	0	0	0	0	259
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	6,430	0	0	0	0	0	0	0	0	0	0	0	0	6,430
8	0	3,085	0	0	131	0	0	0	0	0	0	0	0	0	0	3,216
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	2,195	0	0	0	0	0	0	0	0	0	0	0	0	0	2,195
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	695	7,965	0	5,168	0	0	0	0	0	0	0	0	0	0	13,828
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	493	0	0	0	0	0	0	0	0	0	0	0	0	0	493
15	0	0	0	0	9,319	0	0	0	0	0	0	0	0	0	0	9,319
16	0	0	0	0	207	0	0	0	0	0	0	0	0	0	0	207
17	0	9,108	0	1,739	219	0	0	0	0	0	0	0	0	0	0	11,066
18	0	649,690	0	0	0	0	0	0	0	0	0	0	0	0	0	649,690
19	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	68
20	0	89	0	0	0	0	0	0	0	0	0	0	0	0	0	89
21	0	15,086	0	0	0	0	0	0	0	0	0	0	0	0	0	15,086
22	0	2,130	96,173	0	0	0	0	0	0	0	0	0	0	0	0	98,303
23	0	20,970	0	0	0	0	0	0	0	0	0	0	0	0	0	20,970
24	0	100,448	0	0	0	0	0	62,027	0	0	0	0	0	0	0	162,475
25	0	115,932	0	0	51,953	0	0	1,318,584	0	0	0	0	0	0	0	1,486,469
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	12,577	30,690	0	0	0	0	0	0	0	0	0	0	0	0	43,267
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,915,977
32	0	134,318	0	250,079	0	0	0	0	0	0	0	0	0	0	0	2,541,112
33	0	178,776	181,719	0	0	280,447	0	0	0	0	0	0	0	0	0	912,386
34	0	217,132	314,529	0	0	0	0	0	0	0	0	0	0	0	0	3,106,036
35	0	388,848	278,963	113,967	0	0	0	0	0	0	0	0	0	0	0	781,778
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	3,320	0	0	0	0	0	0	0	0	0	0	0	0	0	3,320
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	1,943,426	916,469	369,009	68,753	280,447	0	1,380,611	0	0	0	0	0	0	0	15,877,226

Table A3.5.4 Future OD (Inland Waterway)

2022 Inland Waterway Transport **Unit: ton**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	TOTAL
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61,237	21,089	0	0	0	0	0	0	0	0	0	0	0	0	82,326
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,528	0	0	0	0	0	0	0	0	0	0	0	0	8,528
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,254	0	0	0	0	0	0	0	0	0	0	0	0	4,254
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,400	0	0	0	0	0	0	0	0	0	0	0	0	8,400
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	776	4,152	0	0	0	0	0	0	0	0	0	0	0	0	4,928
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64,139	7,725	0	0	0	0	0	0	0	0	0	0	0	0	71,864
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,426	4,012	0	0	0	0	0	0	0	0	0	0	0	0	8,438
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	15,218	525,866	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17,268	0	44,627	56,164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	659,143
32	32,809	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,271	0	4,220	8,421	4,173	7,401	3,991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16,976	0	86,262
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11,376	0	0	0	0	0	0	0	0	0	0	0	0	11,376
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	48,027	525,866	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,271	0	4,220	25,689	4,173	52,028	60,155	0	0	0	0	0	130,578	69,536	0	0	0	0	0	0	0	0	0	16,976	0	945,519

3.6 OD Matrices

The table below shows all the OD matrices estimated in the JICA Study. These OD tables are stored in the submitted CD (The Demand Assignment System for Export and Import Freight Volume).

Case	Transport Modes	Commodity Types	Total	Remarks
Present	3 (Truck+ Railway+ Inland Waterways)	18 Types	54	
Future (1)			54	
Future (2)	2 (Truck+ Railway)		36	Rail Development Case. Inland waterway OD is same as Future (1)

4. Analysis of Break Even Distance by Subsidy Reduction

4.1 Operating Cost of Each Transport Mode

According to "Transportation Master Plan and Feasibility Study of Urban Transport Projects in Greater Cairo Region in the Arab Republic of Egypt (CREATS), (JICA, 2002)", vehicle operating cost (VOC) of truck[2] was estimated as 1.75 LE/vehicle-km in 2002. The VOC of truck was updated to 2.33 LE/vehicle-km as of 2006 price by applying the inflation rate of consumer price index (CPI) between 2002 and 2006 of which growth rate during five years was estimated as 33%. Assuming the average load of the tuck to be 15 tons, the VOC of truck with weight of 1 ton can be calculated 0.155 LE/ton-km.

According to "Sustainable Transport, Egypt, Project Document, (UNDP, 2006)", percentages of freight transport costs of railway and IWT against truck were estimated as 50% and 36%, respectively. In the JICA Study, the freight transport cost was regarded as same as the operating cost. Therefore, the operating costs of railway and IWT were calculated as 0.078 and 0.056 LE/ton-km. In addition to the operating costs of railway and IWT, it is important to consider the following costs:

(1) Access Cost by Truck

For railway and IWT, access cost by truck is required between railway station (river port) and origin/destination. In the JICA Study, the cost was set as 1.55 LE/ton assuming that the transport distance for the access between railway station (river port) and origin/destination is 10km.

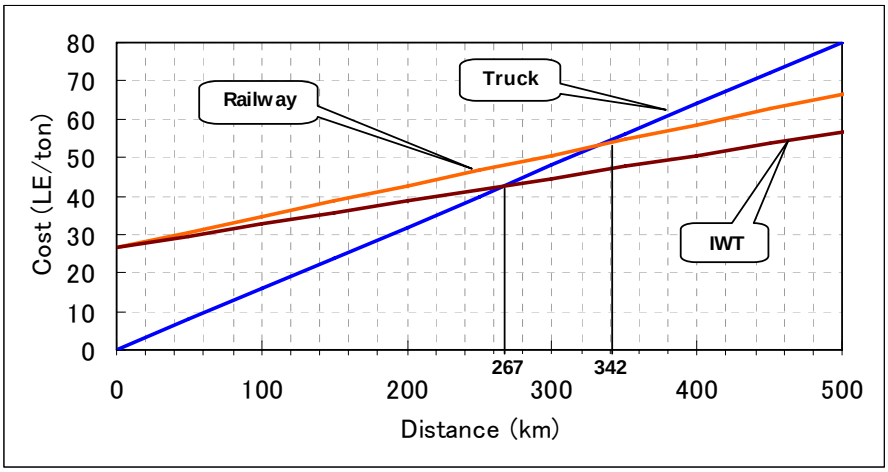
(2) Charges at Railway Station and River Port

At railway station and river port, railway and IWT is required to pay the charge for loading/unloading between truck and railway/IWT. The charge was set as 25 LE/ton in accordance with the handling tariff tables of "Egyptian Ports Regulations, (the Middle East Library for Economic Services, September 2006)".

The cargo handling costs inside sea ports are not included in the above cost estimation because these costs are the same for all modes.

Figure A4.1.1 illustrates a relationship between operating cost and distance by applying the above operating costs of truck, railway and IWT. In the present condition, the break even distance between truck and railway and truck and inland waterway is estimated to be 342km and 267km respectively.

[2] In the CREATS, the VOC of truck was divided into three types including small, medium and heavy trucks. The JICA Study Team applied the VOC of heavy truck.



Source: JICA Study Team

Figure A4.1.1 Relationship between Operating Cost and Distance

4.2 Impact on Subsidy Reduction

According to "the Impact of Reducing Energy Subsidies on Energy Intensive Industries in Egypt, (the Egyptian Center for Economic Studies (ECES), 2007)", domestic and international prices of diesel oil in 2005/2006 were 668.7 LE/ton and 2,440 LE/ton respectively. In Egypt, the diesel oil is supplied with only 27.4% of international price. In other word, the domestic price of the diesel oil is supported by the government subsidy of 72.6%.

In the CREATS, the VOC of truck was estimated as 1.75 LE/vehicle-km in 2002 as mentioned above. In addition, the fuel consumption and financial fuel price were estimated as 0.60 litre/km and 0.40 LE/litre, respectively. The diesel price per kilometer for truck can be calculated as 0.24 LE/km, which accounts for 13.7% in the VOC of truck.

Applying the inflation rate of CPI, the diesel price per kilometer was calculated as 0.319 LE/km (0.24 x 1.33). This is the diesel price under the present condition of the energy subsidies in Egypt. The VOC without the fuel cost was calculated as 2.01 (2.33 – 0.319). In case that the subsidy was completely cut from the diesel price, the diesel price per kilometer is estimated as 1.164 LE/km (0.319 / 27.4).

From the above estimation, the operating costs of truck, railway and IWT were calculated as:

- Operating Cost of truck = {1.164 x (1.0-Share of Subsidy) + 2.33 x (1.0 – 0.137) }/ 15

- Operating Cost of Railway = Operating Cost of truck x 0.5

- Operating Cost of IWT = Operating Cost of truck x 0.36

Unit: LE/ton-km

The operating costs of railway and IWT were estimated by multiplying that of truck by 50% and 36%, respectively, because there are no sufficient data to estimate the share of fuel in the operating costs.

Note that the railway and IWT need additional charges in addition to the operating cost as described as mentioned above section. The total cost of railway/IWT becomes lower than that of truck when the additional charges become smaller than the difference between truck and

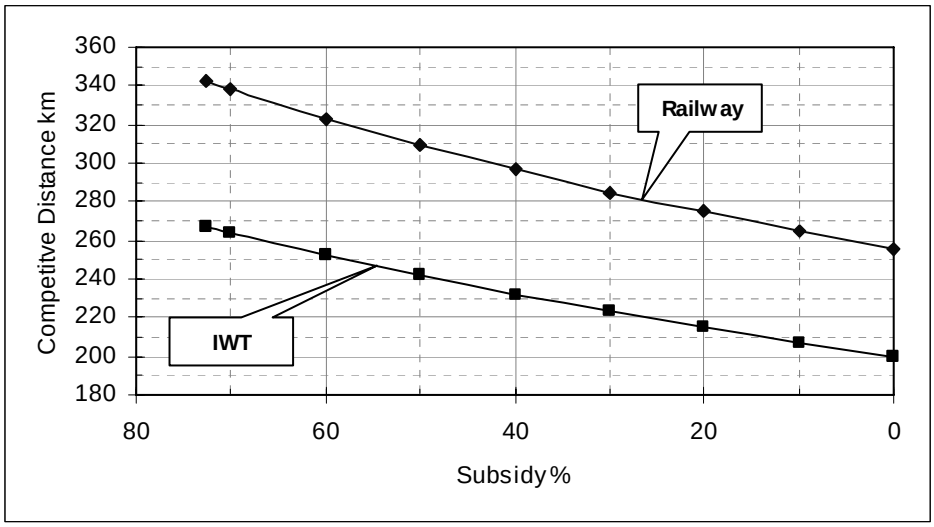
railway/IWT. In case that the differences between truck and railway/IWT were same as the additional charges, the distance means the break even distance.

Table A4.2.1 Calculation of Break Even Distance

Share of Subsidy	Additional Charges (Unit: LE/ton)			Operating Cost (Unit: LE/ton-km)			Difference (Unit: LE/ton-km)		Break Even Distance (Unit: km)	
	(1) Access cost by truck	(2) Charge at station/ river port	(3) Total (1)+(2)	(4) Truck	(5) Railway	(6) IWT	(7) Between truck and railway (4) - (5)	(8) Between truck and railway (4) - (6)	Railway (3)/(7)	IWT (3)/(8)
72.6%	1.553	25.0	26.55	0.155	0.078	0.056	0.078	0.099	341.9	267.1
70%	1.574	25.0	26.57	0.157	0.079	0.057	0.079	0.101	337.8	263.9
60%	1.651	25.0	26.65	0.165	0.083	0.059	0.083	0.106	322.8	252.2
50%	1.729	25.0	26.73	0.173	0.086	0.062	0.086	0.111	309.2	241.6
40%	1.807	25.0	26.81	0.181	0.090	0.065	0.090	0.116	296.8	231.9
30%	1.884	25.0	26.88	0.188	0.094	0.068	0.094	0.121	285.4	222.9
20%	1.962	25.0	26.96	0.196	0.098	0.071	0.098	0.126	274.9	214.7
10%	2.040	25.0	27.04	0.204	0.102	0.073	0.102	0.131	265.2	207.2
0%	2.117	25.0	27.12	0.212	0.106	0.076	0.106	0.136	256.2	200.1

Source: JICA Study Team

Figure A4.2.1 was illustrated from the estimated figures in Table A4.2.1.



Source: JICA Study Team

Figure A4.2.1 Change of Break Even Distance according to the Subsidy Reduction

Appendix-4 Sea Port

Appendix-4 Sea Port

1. Major Ports in the Eastern Mediterranean

(1) Piraeus Port, Greece

Container Terminal

1. Existing Outline of Facilities
   Pier I; 50,000 m2
   Pier II; 380,000 m2
   Yard; 270,000 m2
   Total; 700,000 m2
   14 gantry cranes in service

2. Throughput (2006)
   1.40 million TEU
   (50% for transhipment)

3. Current Development Project
   Pier I Upgrading (~2008)
   Pier III development
   (2008~)

Source: Google Earth

(2) Marsaxlokk Port, Malta

Container Terminals

1. Existing Outline of Facilities
   Terminal 1; 390,000 m2
   Terminal 2; 230,000 m2
   Total; 620,000 m2
   19 gantry cranes in service

2. Throughput (2004)
   1.46 million TEU
   (over 90% for transhipment)

3. Current Development Project
   Yard expansion 100,000 m2
   (on-going)

Source: Google Earth

(3) Gioia Tauro Port, Italy

Source: Google Earth

Container Terminals

1. Existing Outline of Facilities
   Quay; 380m (-18m), 3000m (-13.5~15.5m)
   Yard; 1,660,000 m2
   22 gantry cranes in service

2. Throughput (2006)
   2.94 million TEU

3. Current Development Project
   Yard expansion 100,000 m2 (on-going)

2. Port Tariff

Calculation Results of Charges for Import Container per TEU at Egyptian Container Terminals

(1) Alexandria and Dekheila Ports

The charges for import container at Alexandria and Dekheila government terminals are shown below. The storage service is free of charge within a week and charged only on excess days more than one week.

Table A2.1 Charges for Import Container at Alexandria and Dekheila Terminals (Gov.)

Port charge	USD 27,480 per vessel (USD 55 per TEU)	Port dues; GRT x USD 0.25 = USD 17,500 Berthing dues; GRT x USD 0.125 x days = USD 8750 Tug boat; No. x USD 250 = USD 500 Pilot charge; USD 610 (depends on ship size) Mooring charge; USD 120 (depends on ship size)
Container handling charge (including terminal charge)	USD 200 for a 20ft container	
Miscellaneous charges	USD 20 for a 20ft container	X-ray, weighing trucks, etc

Source: Alexandria Port Authority, arranged by JICA Study Team

The amount of charges at Alexandria and Dekheila Government terminals is calculated at USD 275 for a 20ft container.

On the other hand, the charges at AICT are shown in Table A2.2. The storage service is free of charge within a week and charged only on excess days more than one week.

The port dues, container handling charge and miscellaneous charges are charged on shipping lines. However, the terminal handling charge is charged on consignee. The amount of charges at AICT is calculated at USD 176 for a 20ft container. If a container is marked by the customs for examination, an additional charge of USD 46 is required.

Table A2.2 Charges for Import Container at AICT

Port charge	USD 55 per TEU (as same as above)	
Container handling charge	USD 84 for a 20ft container	
Terminal handling charge	LE 145 (USD 25) for a 20ft container	Including delivery charge, ISPS charge, custom examination service charge, etc
Miscellaneous charges	USD 12 for a 20ft container	Receiving empty container

Source: AICT and Alexandria Port Authority, arranged by JICA Study Team
Note: The tariff at AICT is valid until December 2007.

(2) Damietta Port

The charges at Damietta Port are shown below. The amount of charges at Damietta Port is calculated at USD 236 for a 20ft container.

Table A2.3 Charges for Import Container at Damietta Port

Port charge	USD 16,630 per vessel (USD 33 per TEU)	Port dues; GRT x USD 0.21 = USD 14,700 Berthing dues; GRT x USD 0.01 x days = USD 700 Tug boat; No. x USD 250 = USD 500 Pilot charge; USD 610 (depends on ship size) Mooring charge; USD 120 (depends on ship size)
Container handling charge (including terminal handling charge)	USD 183 for a 20ft container	Including storage inside the terminal for 3-7 days, security and inspection of empty units for damages and reporting them, cleaning the inside of container and all necessary labor work
Miscellaneous charges	USD 20 for a 20ft container	X-ray inspection, weighting trucks, etc

Source: Damietta Container Handling Company

(3) Port Said Port (West)

The charges at Port Said Port (West) are shown below. The storage service is charged in accordance with the period for which the container is in the yard. Therefore, the amount of dues at Port Said Port (West) is calculated at USD 236 for a 20ft container.

Table A2.4 Charges for Import Container at Port Said Port (West)

Port charge	USD 16,630 per vessel (USD 33 per TEU)	Port dues; GRT x USD 0.21 = USD 14,700 Berthing dues; GRT x USD 0.01 x days = USD 700 Tug boat; No. x USD 250 = USD 500 Pilot charge; USD 610 (depends on ship size) Mooring charge; USD 120 (depends on ship size)
Container handling charge (including terminal handling charge)	USD 183 for a 20ft container	Including storage inside the terminal for 3-7 days, security and inspection of empty units for damages and reporting them, cleaning the inside of container and all necessary labor work
Miscellaneous charges	USD 20 for a 20ft container	X-ray inspection, weighting trucks, etc

Source: Port Said Port Authority

(4) Port Said Port (East)

The charges at SCCT are summarized in Table A2.5. The amount of charges at SCCT is calculated at USD 214 for a 20ft container.

Table A2.5 Charges for Import Container at SCCT

Port charge	USD 16,630 per vessel (USD 33 per TEU)	Port dues; GRT x USD 0.21 = USD 14,700 Berthing dues; GRT x USD 0.01 x days = USD 700 Tug boat; No. x USD 250 = USD 500 Pilot charge; USD 610 (depends on ship size) Mooring charge; USD 120 (depends on ship size)
Container handling charge	USD 70 for a 20ft container	
Terminal handling charge	Total USD 111 for a 20ft container	
	USD 60	Gate out in full
	USD 40	Gate in empty
	USD 5 (USD 50 x 10%)	Standard inspection 10%
	USD 6	Storage

Source: Website of SCCT

Note: Local cargo standard inspection charges per container however not including full container inspection or any additional costs

(5) Sokhna Port

Table A2.6 shows the basic container handling charge, even though it is actually discounted by the volume. The amount of dues at Sokhna Port is calculated at USD 274 for a 20ft container. For reference, the railway fee from Sokhna Port to Alexandria Port is USD 145 for a 20ft container.

Table A2.6 Charge for Import Container at Sokhna Port

Port charge	USD 25,000 per vessel (USD 50 per TEU)	Including pilot service, tug service, navigation service and lines man.
Container handling charge	USD 110 for a 20ft container	
Terminal handling charge	USD 114 for a 20ft container	Including administration, Customs inspection, X-ray, receiving empty container and weighing trucks in/out. Excluding Customs clearance and agency fees.

Source: Sokhna Port Development Company

Appendix-5 Public Private Partnership (PPP)

Appendix-5 Public Private Partnership (PPP)

1. Egypt's PPP Strategy

Executive Summary

Egypt needs to move quickly to remove the barriers that prevent, or discourage, private investment in basic services such as water, electricity, gas, waste management, road building and transportation. Failure to act is retarding development, arresting social change and threatens to jeopardize the positive results of privatization in other sectors.

The JICA Study presents a strategy for promoting and supporting private investment in infrastructure projects. Despite the private sector involvement in infrastructure projects in Egypt, still it remains very limited. Thus, the JICA Study analyzed the main challenges facing private sector participation in infrastructure projects and proposed a strategy to promote such participation.

The JICA Study main findings were that, the main challenges facing private sector participation in infrastructure projects in Egypt are basically: inadequate legislative system and institutional framework, and unfavorable public opinion.

Then a proposed strategy for promoting private sector participation in infrastructure projects was presented. It basically rests on three pillars. First, reforming and upgrading the legislative system of private investments in infrastructure facilities, second, reforming and improving the institutional framework and third, developing a communications strategy.

1.1 Introduction

Economic and social development entails parallel and equal investment and development in infrastructure services and facilities. The importance of infrastructure is manifested in its various roles in the economy as it enhances the economy's potential for long- term sustainable growth, increases productivity and income levels and improves the quality of life as well as the overall climate for foreign investments.

Traditionally, the public sector has been more involved in areas where governments formed natural monopolies (such as providing electricity, water sanitation, telecommunications, and infrastructure projects in general) while leaving for the private sector more competitive areas for pursuing economic activity (such as industry, agriculture, and retail operations). Historical evidence in some countries, as well as the current situation in some others, has proven that the public sector alone is unable to provide infrastructure projects in the manner required.

It is fair to say that monopolization in the provision of infrastructure projects by the public sector has on one hand reduced the quality of services provided, and on the other hand severely strained governments' budgets. In addition, the quality of infrastructure provided in any country is considered a prerequisite for economic growth and development, and consequently this fact has raised concern regarding improving the quality of infrastructure projects by finding new means of implementation aside from the conventional method of relying solely on the public sector.

A solution for solving such a dilemma is to break public sector monopolies in the provision of infrastructure projects in a manner that would guarantee the required improvement and efficiency in the provision of infrastructure projects. From this stand point, a major shift has occurred regarding the role of governments in providing infrastructure projects. Many countries and governments have been moving away from owning and operating infrastructure projects to regulating those projects provided by the private sector.

Private sector participation can help improve infrastructure services in several ways. Well-designed public-private infrastructure can increase service efficiency, allowing the private operator to increase profits by reducing costs or improving service quality. The private sector can also offer infrastructure providers much-needed financing, allowing for the provision of services even when the public sector lacks access to the necessary funds. These advantages, plus the greater customer focus of the private sector, can substantially improve the quality of services to customers.

The benefits of private sector participation will be greater if the government also develops supporting policies on competition and regulation, and clarifies the responsibilities of government agencies involved in the sector. Private sector participation contracts are complex. When they are well designed, such contracts allocate risks to the party best able to manage or mitigate them. Finally, in such a complex and long-lasting transaction, the government needs to be sure to choose the right private company. Various techniques are available to select a suitable company through competition and to deal appropriately with unsolicited offers.

Public Private Partnerships are a world phenomenon. Public Private Partnerships (PPP or P3) are forms of “collaboration or joint endeavor between public and private sectors for the purpose of developing, constructing, operating, and financing infrastructure projects."

There are various types of Partnerships in infrastructure that differs in the degree of private sector involvement. The main types of PPP are as follows:

(1) Service contracts: The public authority retains overall responsibility for operating and managing the whole system, but contracts out specific components, such as meter reading, billing, and maintenance. Service contracts usually last between 1-3 years.

(2) Management contracts: The public authority transfers responsibility for management of a range of activities in a specific area to the private sector. In such a situation, the public authority often finances working and investment capital and determines cost recovery policy. This ranges from 3-5 years.

(3) Lease contracts: Private operators rent a facility from the public authority and assume responsibility for the operation and management of the facility as well as tariff collection. The lessor effectively buys the right to the revenue stream and thus shares significant commercial risks. This ranges from 5-15 years and could be extended.

(4) Build Operate Transfer (BOT): BOT contracts are usually used to procure large infrastructure projects. The private operator is required to finance, construct and operate the facility for a certain number of years (from 20-30 years), after which the facility is

returned to the public sector. The BOT contract could take other various forms which can also be used to carry out infrastructure projects such as BOOT, BOO.

(5) Concession contracts: Private operators become responsible for operation and management and investment, while the public authority retains ownership of a facility's assets. These concessions may offer a national or city-wide franchise and may last for from 25-30 years. Others are of short duration, such as a concession to provide refreshments, or longer, such as the franchising of the UK's national, lottery, which is periodically rebid.

(6) Divestiture: Full private ownership and responsibility falls under a regulatory regime.

The following table summarizes the key Private Participation in Infrastructure (PPI) approaches.

Table A1.1.1 Key PPI Approaches

Approach	Asset Ownership	Operation & Maintenance	Capital Investment	Commercial Risk	Contract Duration
Service Contract	Public	Public/private	Public	Public	1-2 years
Management Contract	Public	Private	Public	Public	3-5 years
Lease	Public	Private	Public	Shared	8-15 years
Concession	Public	Private	Private	Private	25-30 years
Build-Operate-Transfer (BOT)	Public and Private	Private	Private	Private	2-30 years
Divestiture	Private or public and private	Private	Private	Private	Indefinite or limited by license

As we move upward and to the right, the private involvement increases.

One solution does not apply to all infrastructure sectors. The appropriate form of PPP depends on the characteristics of the sector; the market it serves and the government's objectives. All PPPs must offer an investor an opportunity to recover capital costs and make a reasonable profit. The common denominator is transforming the State's role from direct service provider to controller and regulator.

Stemming from the urgent need to improve infrastructure, the Ministry of Investment's strategy to attract private investments into public infrastructure projects is designed to improve infrastructure facilities and operate them more efficiently at lower cost so that standards of living rise and development goals are realized.

1.2 Private Sector Participation in Infrastructure Projects in Egypt

Over the past few decades, the Egyptian government has been the major provider of infrastructure projects. However, with a multiplying population, an expanding economy, and increasing financial obligation, the public sector can hardly maintain its role as the sole provider of infrastructure projects.

The inability of the public sector to maintain this role is further confirmed by the bad state of

the publicly financed infrastructure projects and their inability to meet their economic as well as social goals. Consequently, the Egyptian government has been urged to partner with the private sector in delivering infrastructure projects.

In the past 15 years (1990-2004), Egypt had new projects with private participation in four infrastructure sectors: Energy, Telecom, Transport, Water and Sewerage. In those sectors, 16 projects involving investment commitments for $ 6.2 Billion reached final closure where the telecom sector received the largest share of investment.

Table A1.2.1 Private Participation in Infrastructure Projects in Egypt by Sector (1990-2004)

Primary sector	Sub- sector	PPI projects	Total PPI investments (US$ millions)
Energy	Electricity Natural gas	3 1	1,158 220
Total		4	1,378
Telecom		4	3,964
Transport	Airports Seaports	6 2	398 461
Total		8	859
Grand total		16	6,208

Greenfield projects were the most frequent form of private participation representing 81% of the projects and 68% of total investment in PPI projects in the country.

Table A1.2.2 Private Participation in Infrastructure Projects by Type (1990-2004).

Form of PPI	PPI projects	Total PPI investments (US $ million)
Concession	1	70
Divestiture	1	1,927
Greenfield	13	4,205
Management and lease	1	0
Grand total	16	6,202

Source: http:// ppi.worldbank.org

Despite the private sector participation in infrastructure previously mentioned, it still remains very limited especially if compared with other developing countries like Malaysia, Philippines, and Czech Republic. During the same period 81, 78, 68 combined PPI projects and total investment in PPI projects during the same period are $ 37,845, 31,53, and 16,822 million respectively.

That is why the Egyptian Ministry of Investment has developed a strategy to promote private investment in infrastructure.

- Motivations for Promoting the Private Sector's Engagement In Infrastructure Projects

(1) Remedying insufficiency of government finance

The private sector's inclusion in financing and operating public infrastructure helps to sustain the development cycle by building new facilities such as electricity, water and drainage stations, airports and the like. This does not burden the public purse further and helps restrain governments from resorting to further taxation, and redirect resources to

non-profitable social sectors such as education and healthcare.

(2) Speeding up the economic and social growth rate

Private sector participation in public facilities is a form of private direct investment with the merits of direct investment. This involvement should create new jobs and real investment opportunities for national contracting companies. Building new facilities in remote areas extends population areas and creates new industrial bases. In addition to that, Participation by the private sector supports tourist development schemes especially transport and airport projects. It also improves the overall climate for foreign investments and stimulates the economy as a whole through improved balance of payments, technology transfer, employment, etc.

(3) Improving the performance of public facilities

The effectiveness and improvement of infrastructure projects-as public assets- increase with private involvement .The private sector has acquired a good deal of financial and technical experience in many sectors. It is also interested in upgrading the service level, which satisfies the public interest. The government and controlling bodies may benchmark the performance and quality of services provided by the private sector. This benchmark can be used to measure the quality of services provided by government agencies. Some forms of private involvement can be used as mechanisms for structural reform, as in the case of economic facilities management contracts.

(4) Transferring commercial risk to the private sector

Commercial risks include lack of demand for the services or products provided by the facility, the risks related to the costs of the service or product and fluctuations in foreign currency rates or inflation. These risks may be contained within the existing market mechanism. Private investment in infrastructure facilities is a means to transfer the operating risks related to the market forces to the private sector. This does not mean that the government will disengage itself entirely. In fact, government bears the political risks as well as those caused by amending laws. The government encounters untoward commercial events to sustain services and facilities. Through optimal risk transfer and risk management, better value for money for the taxpayer can be provided.

(5) Other economic goals

- Transferring modern technology to economic facilities,
- Extending private ownership and adopting a market-economy approach,
- Stimulating the domestic capital market by issuing new securities,
- Using private investments to enforce some structural reform policies,
- Speedy, efficient and cost effective delivery of projects,
- Competition and greater construction capacity, and
- Effective utilization of state assets to the benefit of all users of public services.

1.3 Challenges Facing Private Investment in Infrastructure Projects

Despite diligence the Egyptian experience in recent years has uncovered a number of obstacles to promoting investments in infrastructure projects. Private involvement in financing and

operating infrastructure facilities is blocked by several factors:

- An inadequate legislative system,
- Difficulties related to institutional framework, and
- Unfavorable Public opinion.

(1) Inadequate legislative system

- Regulations governing the selection of the most qualified investors and best offers are imperfect. There are no evaluation techniques that comply with the financial, technical and operational aspects of these projects. The fundamentals included in the current law governing bids and auctions are not applicable to these projects.
- Some laws, such as the law governing public facilities, include stipulations that contradict contemporary financial and economic fundamentals and, given the nature of these projects and facilities, their current situation. In fact, these laws are hindrances to private investments in public facilities and infrastructure projects. The legislators have enacted new laws for private investments in some economic sectors such as electricity, communications and airports. The result has been to create some unjustified and contradictory laws.
- Current Egyptian law does not cover all modes of private involvement, resulting in legal ambiguity. Contradictory legal opinions and advice have been given over the validity of some contracts entered into by the government. This has led to more difficulties in raising finance, adding cost to cover potential legal jeopardy.
- Current laws do not identify the authorities or administrative bodies authorized to make partnership agreements with the private sector.
- Except for the communications and electricity sectors, no controlling or supervisory bodies exist to regulate the establishment and operation of facilities, and to issue licenses that ensure quality and free competition among service providers.
- Current laws lack the objective organization of the rights of the relevant authority and the investor, especially concerning the financial arrangements and the capital being invested.
- Lack of established legal and regulatory procedures that define the means for enforcement of contracts and the resolution of disputes.
- Lack of adequate regulatory structures to control both technical and economic performance. Regulations of tariffs and other economic factors are undeveloped.

(2) Difficulties related to institutional framework

In spite of the corrective measures taken by the government, many institutional obstacles confront private investments in infrastructure facilities. The negative impacts of these obstacles have doubled due to the slow structural reform of public facilities. These difficulties can be summarized as follows:

- The absence of a unified strategic vision at the central level to deal with the private sector's involvement in financing and operating infrastructure facilities. There are many institutions responsible for organizing this involvement. Investors are required to obtain several approvals and licenses. These procedures have created contractual complications and prevented the implementation of many projects. Investors received contradicting messages concerning the government stance on private investments in infrastructure facilities.
- Many economic sectors lack the technical, financial and legal experience necessary to offer infrastructure projects to the private sector and organize private participation. These sectors lack strategic planning skills to determine needs and priorities and the ability to judge the social and economic feasibility of these projects.
- The poor economic feasibility and considerable commercial risk involved in operating a number of the projects offered. This has led the private sector to become ill-disposed to investment in these projects with the consequent of fewer projects that were planned being implemented.

(3) Unfavorable Public Opinion:

Lack of Public awareness concerning the following issues:

- The importance and advantages of private involvement in financing, improving and operating infrastructure facilities and its positive impacts on economic and social development.
- The different forms of the public private partnership in infrastructure and the dominance of the idea that private sector participation is confined to full privatization. This lack of awareness and negativity are not confined to the public but exist in legislative bodies and local councils as well as some government bodies. It is a matter of urgency to correct this situation and motivate the public and institutions to support the road to private investment.

1.4 Strategy for Promoting Public Private Partnership (PPP) in Infrastructure

In order to promote private investment in infrastructure projects, a series of economic, financial, legal, and institutional reforms is necessary.

The proposed strategy for realizing the goals set and to overcome obstacles rest on three pillars:

(1) Reforming and upgrading the laws governing private investments in infrastructure facilities,

(2) Reforming and improving the institutional framework, and

(3) Developing a communications strategy.

(1) Reforming and upgrading the legislative system of private investments in infrastructure facilities

The starting point is the creation of a proper legislative framework that is conducive and supportive to private investments in infrastructure facilities. This entails enacting a comprehensive set of laws regulating the private sector's involvement in financing and operating infrastructure facilities. This law should be based on:

- Eliminating undesirable obstacles confronting private investments in infrastructure facilities,
- Developing a clear legal framework for all forms of private involvement,
- Identifying central and local authorities empowered to make contracts as well as the institutions that issue licenses for private involvement,
- Establishing the regulations governing private investment in all public economic facilities and sectors,
- Enhancing "free competitiveness" principle and ensuring quality and fair pricing by creating supervisory and regulatory bodies for each sector independent of service providers. A good example in this regard is the Irish experience where dedicated PPP units responsible for individual sectors are established in key Government departments: department of finance, environment and local government, education and science and transport to oversee the PPP process,
- Creating a legal framework that is appropriate for selecting investors through effective and competitive procedures that match the nature of these projects. Clear criteria for controlling activities should be set at the very beginning. These criteria should be enforced before selecting the successful bidders. Criteria should precede, not follow, the selection or contracting. When evaluating the offers from the private sector, institutions should consider technical accuracy, operational feasibility, type of service, and sustainability factors and the opportunities for social and economic development from the project,
- Sustaining the regular operation of the facilities in question,
- Coping with modern international trends and finance and operational fundamentals in dealing with the contractual rights and obligations of investors,
- Direct investments in infrastructure services should be supported. Reduced-interest finance should be provided,
- The public interest and the consumers' needs should be weighed heavily,
- Reconsidering the taxation framework and providing preferential treatment for the private sector investing in infrastructure projects i.e. possibility of offering tax exemptions to private parties. This can be done within the context of the new taxation law, and
- Develop standard contracts that are internally consistent and meet international

standards.

The National Democratic Party's economic committee has finalized a draft law regulating the private sector's participation in financing and operating infrastructure facilities. It is now being reviewed and prepared for publication.

The law will create a general legislative framework to organize private investments in this field and complement other investment laws. Executive regulations and detailed regulations for each sector should follow.

(2) Reforming and improving the institutional framework:

- Political commitment and good governance are prerequisites for success. The Private sector needs to know that politicians are committed to private involvement and that the government is fair in its dealing with the private sector and will meet the commitments it makes under PPPs.
- Establishing a central unit to organize the private sector's participation in financing and operating infrastructure facilities removing institutional obstacles. This unit will aim to:
  - ✓ Create the State's unified vision for organizing private involvement in infrastructure projects.
  - ✓ Create mechanisms and provide qualified technical, financial and administrative staff to organize private investments in public facilities and infrastructure projects through different stages.
  - ✓ Support and promote private investments in infrastructure facilities.
  - ✓ Support economic development.
  - ✓ Support the structural reform of infrastructure facilities.

The goals of this unit as previously mentioned are highly related to promoting and supporting private investments in infrastructure facilities, extending private ownership and administration and undertaking structural reform of public facilities. To achieve those, the body will be assigned to:

- Enforce the terms of the contract, protect consumers from monopolistic behavior and ensure acceptable service and compliance with environmental standards.
- Prioritize infrastructure projects according to the development plan, finance resources and social and economic needs.
- Prepare social and economic feasibility studies for projects. This should be in co-operation with the relevant sectors and institutions to determine finance options and modes of participation. These studies should be made available to investor enquiries and updated regularly by professional consultants. Costs related to the JICA Study can be recovered from investors if they take their decision to invest.
- Prepare forms and guides for private investments in infrastructure facilities.

- Prepare the terms and conditions to offer projects for pre-qualification and bids.
- Set guidelines for technical, financial and commercial evaluations.
- Prepare contract and agreement forms of private involvement, according to existing international codes.
- Coordinate with relevant supervisory bodies in different sectors to ensure progress and performance of facilities, according to current economic and administrative regulations and practices.
- Market project offerings locally and internationally.
- Enforce the finance and credit enhancement mechanisms of infrastructure projects.
- Coordinate and cooperate with international agencies such as International Finance Corporation (IFC), Multilateral Investment Guaranteeing Agency (MIGA) for technical and financial assistance.

The unit will be affiliated to the Ministry of Investment.

(3) Developing a communications strategy

The success of PPP programme requires widespread public support. A PPP communications and awareness strategy should be developed and directed to key stakeholders including officials of the public services procuring agencies, employees in sectors where PPPs will be developed and the general public.

The strategy key objectives are:

- Develop a profile for PPP both nationally and internationally to inform firms and stakeholders of the existence and possible application of PPP.
- Educate participants and interested parties on the potential advantages and disadvantages of PPP.
- Provide a resource for the general public, potential participants to obtain information clarifying all issues related to PPP.
- Motivating the Public to accept the increase in tariff due to the improvement in the service provided and the fact that the private sector is bearing high risks that should be offset by adequate economic and financial return.

1.5 Proposed Strategy:

- Develop and implement a promotional programme targeted at key audiences. This will involve developing a national site on PPP, organizing national and regional information seminars, developing and promoting promotional materials; a logo to be used on all projects, tapping national and local media with both planned and reactive articles and speeches.
- Provide information, references and examples. This will involve issuing a report that clarifies the chances available to the private sector to invest in infrastructural projects and

placing all publications and training information on the website with other useful links. The communications strategy can be implemented through the promotion department in the specified regulatory body. A good reference in this regard is the Irish experience.

2. Risk Sharing between Public and Private Sectors

Risks		Steps to Mitigate/Minimize Risks	Risk Taker	
Lower Category	No.		ENR	PPP Co.
Political and Legislative Risks				
Deterioration of regional political stability and security	1	• PPP Co. will be entitled to terminate the contract if the government defaults. The government will pay compensation to the PPP Co.	✓	
Breach or cancellation of the contract	2	• PPP Co. will be entitled to terminate the contract if the government defaults. The government will pay compensation to the PPP Co.	✓	
Breach or cancellation of the contract	3	• ENR will be entitled to terminate the contract if the PPP Co. defaults. The PPP Co. will pay compensation to ENR		✓
Expropriation	4	• Compensation from ENR	✓	
Strengthening the environmental policy and regulations	5	• Compensation from ENR	✓	
Changes of associated laws and strengthening related regulations	6	• Compensation from ENR	✓	
Changes of general business laws (taxation policy, accounting rules) and regulations	7			✓
Slow and delay in governmental decision making, licensing and approvals	8	• Depending on the approvals required, ENR will provide compensation.	✓	
Cancel licensing and approvals given by the government	9	• Depending on the approvals required, ENR will provide compensation.	✓	
Coordination failure between ENR and the government	10	• Developing clear, efficient and transparent framework • The above issues are secured by the passage of new regulation or the amendment of related law	✓	
Government inability to meet its contractual obligations	11	• ENR commits to provide necessary guarantee in order to compensate default of the contractual obligations.	✓	
Economic and Financial Risk				
Capital transaction restriction	12	• PPP Co. is free from capital transaction restriction, such as currency convertibility, for operation	✓	
Exchange rate risks (devaluation of local currency, fluctuation of foreign currencies)	13	• Include hedging scheme against exchange rate risks, such as currency swaps options		✓
Construction cost movement due to currency fluctuation	14	• ENR bears cost increase due to currency fluctuation after a certain point. • The PPP Co. bears a certain amount/percentage in order to provide an incentive to minimize the risk.	✓	✓

Imported operational equipment and material cost movement due to currency fluctuation	15		✓	✓
Finance cost increase due to currency fluctuation	16	• PPP Co and ENR prioritize local currency financing rather than foreign currency financing. • Utilization insurance or guarantee from multilateral or bilateral institutions.		✓
Interest rate fluctuation	17	• Introduce fixed rate loan and/or interest rate swaps to mitigate interest rate fluctuation.		✓
Construction cost increase due to Inflation	18			✓
Operation and maintenance cost increase due to Inflation	19	• Automatic fare adjustment mechanism is additionally stipulated in the contract. • The mechanism enable tariff to contain inflation.		✓
Force majeure (Natural disasters, political embargos, riot, wars, invasions and civil disturbance)	20	• ENR to compensate PPP Co. if it happens.	✓	

Design Risk				
Faults in tender specifications	21	• Require ENR to provide a remedy or compensate a PPP Co.	✓	
Innovation	22	• Linking and consolidating design, construction and operation as much as possible as one package when ENR considers tendering in order to encourage the PPP Co. to apply their advanced know-how and innovative skills.		✓
Design contractor fault	23	• PPP Co. will include provisions in the design contract requiring a PPP Co. to provide a remedy or pay damages (of insurance to cover).		✓
Design change due to Government	24	• If ENR asks PPP Co. to change design, ENR covers the cost increase.	✓	
Incorrect geotechnical assumptions at design stage based on data provided by ENR	25	• ENR provides necessary information on geotechnical data. • In order to support design work, ENR will coordinate with concerned organizations.	✓	
Delay in approval procedure leads to increasing costs	26	• ENR would provide compensation (what duration is appropriate?).	✓	
Land Acquisition Risk				
Delay in land acquisition and/or resettlement	27	• Adequate consultations with settlers from the early stage • Timely budget allocation • The process of land acquisition complies with related laws.	✓	
Claims and protest from settlers due to land acquisition	28	• Adequate consultations with settlers from the early stage • Enough compensation • ENR law does not allow ENR starting construction without completion of land acquisition and resettlement.	✓	
Construction Risk				
Completion risk due to not meeting specifications and design requirements	29	• Fixed amount contract for construction work with good record company. • Consolidating design, construction and operation as one package.		✓
Completion risk due to delay of construction	30	• Require liquidated damages from the turnkey contractor under the construction contract (sufficient to cover interest due to lenders and fixed operating costs). • Consolidating design, construction and operation as one package		✓
Cost increase due to contractor failure	31	• PPP Co. will provide a fixed lump sum amount		✓
Cost increase due to changes in safety requirements	32	• ENR is responsible for requirements setting and ENR pays for the increase.	✓	
Cost increase due to change in environmental regulations	33	• ENR is responsible for regulation setting,	✓	

Problems with quality of labor, materials, and road to meet criteria	34	• Require liquidated damages payable by the PPP Co., supplemented by insurance.		✓
Problems with sub contractor	35	• Use own business relation, due diligence skill and conducting market survey.		✓
Defect liabilities	36	• Fixed amount contract for construction work with good record company • Consolidating design, construction and operation as much as possible as one package when ENR consider tendering.		✓
Adverse weather condition	37	• ENR pays to some extent of cost increase due to adverse weather condition • PPP Co. purchases applicable insurance.	✓	✓
Labor problems	38	• Good relationship with employees.		✓
Death or injuries on site	39	• PPP Co. insures workers accident insurance. • PPP Co. purchases applicable insurance.		✓
Interference from third parties, e.g. protesters and NGOs, on planning and construction	40	• ENR conducts public awareness campaign, implement land acquisition in good manner and enforce itself and PPP Co. to meet environmental requirements. • ENR should handle this issue if it occurs.	✓	
Freight Transport Demand and Revenue Risk				
Transport volume is lower than expected	41	• Risk depends on extent of government support.	✓	✓
Fare increases do not happen	42	• Tariff increase is in line with service level up such as installation of new routes.	✓	
Adversary affect of toll increase on traffic demand	43	• Risk depends on extent of government support. Use of shadow toll, or minimum guarantee leaves the demand risk to the Government.	✓	✓
Failure to improve local road access deters traffic	44	• ENR coordinates closely with local governments.	✓	
Improvements in other competing roads reduce traffic	45	• ENR coordinates closely with local governments.	✓	
Improvements in competing modes reduces traffic	46	• ENR carefully assesses effect from other transportation development in Java.	✓	
Change of railway network development plan	47		✓	
Operation and Maintenance Risk				
Labor cost increase	48	• Strengthening automation system to reduce labor work.		✓
Operation cost increase	49	• Entity in charge of concerned operation pays for cost increase. • Linking and consolidating design, construction and operation as much as possible as one package when ENR consider tendering.		✓
Import cost increase (excluding exchange rate change)	50	• Entity in charge on concerned operation pays for cost increase.		✓
Demand decrease and cost increase due to unexpected weather	51	• Entity in charge of concerned operation pays for cost increase.	✓	✓

Non compliance with operation and maintenance requirements by PPP Co.	52	• ENR concludes and signs contracts, which states clear requirements and specifications of services, with PPP Co. • ENR includes a penalty clause in the operating contract.	✓	✓
Negative environmental impacts due to operation	53	• Entity in charge on concerned operation pays for cost increase.	✓	

Appendix-6 Project Profile

Appendix-6

Project Profile Proposed by the JICA Study Team

Project No.	**Project Title**
P27	Container Yard Expansion Project at Alexandria Port (AICT)

1. Objective of Project
- To provide efficient container operation

2. Project Location
Alexandria

3. Sector
- ☑ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency
Alexandria Port Authority

5. Estimated Project Cost
LE 15 million

6. Project Priority
- ☐ Short term
- ☐ Medium term
- ☑ Long term

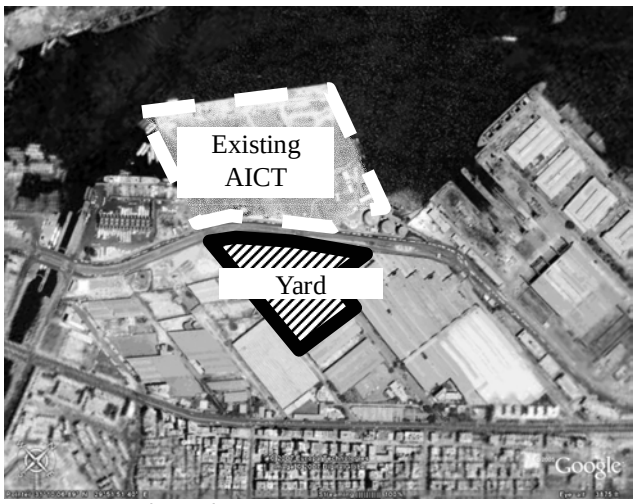
7. Brief Description of Project
It is expected to increase container volumes in line with containerization trend in the world. By expanding container terminal, larger number of containers is expected to be handled at Alexandria Port.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	B
- Regional/local economy:	C
- Cultural/historical heritage:	C
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	-
- Animal:	-
- Ecosystem:	-
- Global warming:	-
(3) Pollution	
- Air pollution:	-
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	-

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



Source: Google Earth

10. Expected Impacts of Project
Expansion of container handling capacity can bring an increase in export/import container volume of newly developing manufacturing industries via this sea port and an increase in earning of the companies concerned. It can also minimize an opportunity cost of transport via detour routes if this project would not implemented. All these can increase the manufacturers' production volume and GDP of Egypt.

11. Remarks
There are some facilities in the proposed yard. It is necessary to minimize negative social impacts by securing appropriate resettlement sites or by supporting livelihood recovery for people in the facilities. Necessary mitigation measures with proper environment and monitoring should be periodically implemented in construction and operation & maintenance stages of the project.

Project Profile Proposed by the JICA Study Team

Project No.
P28

Project Title
Gantry Cranes Renewal and Additional RTG Installation Project at Alexandria Port (Government)

1. Objective of Project
- To increase productivity of container handling at Alexandria Port

2. Project Location
Alexandria

3. Sector
- ☑ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency
Alexandria Port Authority

5. Estimated Project Cost
LE 25 million

6. Project Priority
- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project
This project is to replace three gantry cranes and to install three RTGs to improve deterioration and lack of container handling equipment.

8. Environmental and Social Impacts

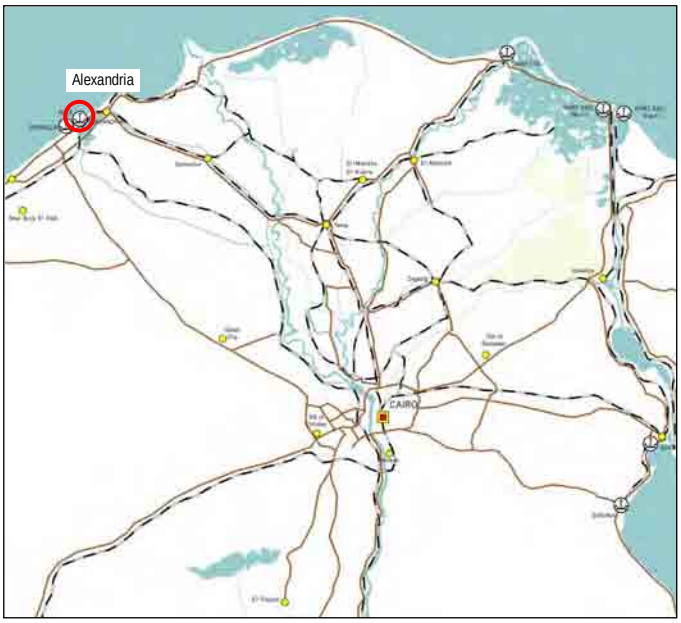
(1) Social Environment
- Involuntary resettlement: -
- Regional/local economy: -
- Cultural/historical heritage: -
- Social vulnerable groups: -
- Other social issues: -

(2) Natural Environment
- Plant: -
- Animal: -
- Ecosystem: -
- Global warming: -

(3) Pollution
- Air pollution: -
- Water quality: -
- Soil contamination: -
- Noise and vibration: -

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



10. Expected Impacts of Project
Increase of container handling capacity and efficiency can bring an increase in export/import container volume and a profit of the companies concerned. Increase in container handling efficiency can also shorten the mooring time of vessels at the port.

11. Remarks
None

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
P29	Container Yard Pavement Upgrade Project at Alexandria Port (Government)

1. Objective of Project

- To utilize existing container yard by stacking containers

2. Project Location

Alexandria

3. Sector

- ☑ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Alexandria Port Authority

5. Estimated Project Cost

LE 125 million

6. Project Priority

- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project

This project to upgrade yard pavement with clear marking to stack each container in order.

8. Environmental and Social Impacts

(1) Social Environment
- Involuntary resettlement: -
- Regional/local economy: -
- Cultural/historical heritage: -
- Social vulnerable groups: -
- Other social issues: -

(2) Natural Environment
- Plant: -
- Animal: -
- Ecosystem: -
- Global warming: -

(3) Pollution
- Air pollution: -
- Water quality: -
- Soil contamination: -
- Noise and vibration: -

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout

Source: Google Earth

10. Expected Impacts of Project

This project can expect an improvement of container handling operation and a reduction of accident (injury and/or container damage), while it can directly improve a container handling capacity and result in an increase of earning of the companies concerned. Safety improvement can also increase the container handling volume and earning.

11. Remarks

None

Project Profile Proposed by the JICA Study Team

Project No.	**Project Title**
P30	Container Terminal Consolidation Project at Dekheila Port

1. Objective of Project

- To promote efficient port operation and maintenance

2. Project Location

Dekheila

3. Sector

- ☑ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Alexandria Port Authority

5. Estimated Project Cost

LE 10 million

6. Project Priority

- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project

This project is to install necessary equipments and to reallocate the facilities for consolidation of government terminal and AICT Dekheila.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	-
- Regional/local economy:	-
- Cultural/historical heritage:	-
- Social vulnerable groups:	-
- Other social issues:	-
(2) Natural Environment	
- Plant:	-
- Animal:	-
- Ecosystem:	-
- Global warming:	-
(3) Pollution	
- Air pollution:	-
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	-

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout

None

10. Expected Impacts of Project

Increase of container handling capacity and efficiency can bring an increase in export/import container volume and a profit of the companies concerned. It can also minimize an opportunity expenditure of higher transport cost via detour routes if this project would not implemented.

11. Remarks

None

Project Profile Proposed by the JICA Study Team

Project No.	**Project Title**
P31	Additional Container Yard Construction Project at Dekheila Port

1. Objective of Project

- To provide efficient container operation

2. Project Location

Dekheila

3. Sector

- ☑ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Alexandria Port Authority

5. Estimated Project Cost

LE 25 million

6. Project Priority

- ☐ Short term
- ☐ Medium term
- ☑ Long term

7. Brief Description of Project

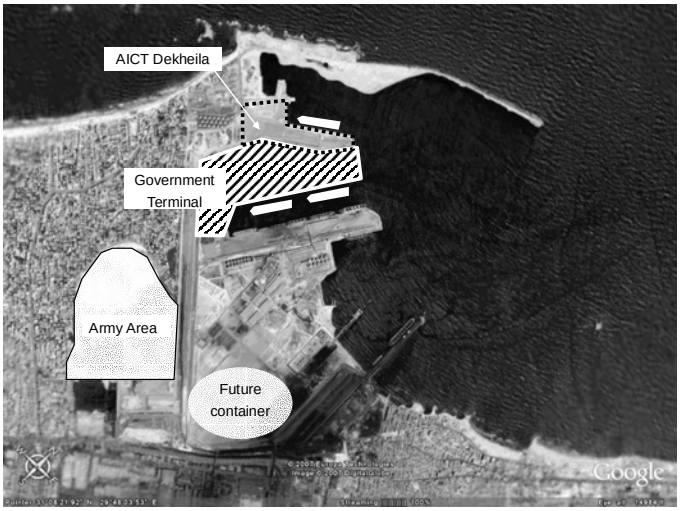
To conduct modern container operation, this project aims to provide additional container yard. The additional container yard will be necessary to keep some distance from bulk coal for container handling equipments.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	C
- Regional/local economy:	-
- Cultural/historical heritage:	-
- Social vulnerable groups:	-
- Other social issues:	C
(2) Natural Environment	
- Plant:	-
- Animal:	-
- Ecosystem:	-
- Global warming:	-
(3) Pollution	
- Air pollution:	-
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	-

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



Source: Google Earth

10. Expected Impacts of Project

Expansion of container handling capacity can bring an increase in export/import container volume of newly developing manufacturing industries via port and an increase in financial earning of the companies concerned. It can also minimize an opportunity expenditure of higher transport cost via detour routes if this project would not implemented. All these can increase the manufacturers' production volume and GDP of Egypt.

11. Remarks

There are few warehouses or facilities in the proposed yard. In the next stage, it is necessary to confirm whether the resettlement is needed or not.

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
P32	Additional Breakwater Construction Project at Dekheila Port

1. Objective of Project

- To ensure sufficient wave calmness for berthing and cargo handling for both container and bulk.

2. Project Location

Dekheila

3. Sector

- ☑ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Alexandria Port Authority

5. Estimated Project Cost

LE 250 million

6. Project Priority

- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project

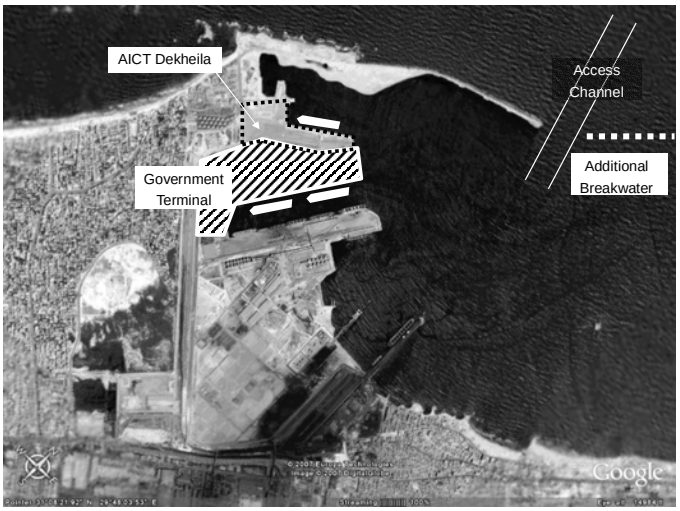
This project aims to build additional breakwater to alleviate excessive wave activity. It is required to examine the layout of breakwater.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	-
- Regional/local economy:	-
- Cultural/historical heritage:	C
- Social vulnerable groups:	-
- Other social issues:	-
(2) Natural Environment	
- Plant:	-
- Animal:	-
- Ecosystem:	C
- Global warming:	-
(3) Pollution	
- Air pollution:	-
- Water quality:	B
- Soil contamination:	-
- Noise and vibration:	-

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



Source: Google Earth

10. Expected Impacts of Project

This project can guarantee the safe mooring of the vessels at the port during the year without any interruption as it is now (full operation of 12 months in a year). This can guarantee the continuous usage of this port for the exporters/importers, resulting in troublesome adjustment in logistics routes. This project can also bring an increase in export/import container volume and a profit of the companies concerned. All these can increase the manufacturers' production volume and GDP of Egypt.

11. Remarks

If fish migrate into the channel around the additional breakwater, this may be impeded by the additional breakwater. A detail environmental survey will be required to predict the long-term impacts of the operating ports on ecosystem and water quality.

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
P33	Conveyor System Installation Project at Dekheila Port

1. Objective of Project

- To improve bulk handling system with modern system.

2. Project Location

Dekheila

3. Sector

- ☑ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Alexandria Port Authority

5. Estimated Project Cost

LE 175 million

6. Project Priority

- ☐ Short term
- ☐ Medium term
- ☐ Long term
- ☑ Depending on Private Company

7. Brief Description of Project

Since the current method of bulk handling is traditional, a conveyor system with silos is installed for cement industry through this project.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	-
- Regional/local economy:	C
- Cultural/historical heritage:	-
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	-
- Animal:	-
- Ecosystem:	-
- Global warming:	-
(3) Pollution	
- Air pollution:	-
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout

None

10. Expected Impacts of Project

Increase in capacity and efficiency of bulk freight handling can bring an increase in export/import container volume and a profit of the companies concerned. It can also reduce a freight handling cost. Total handling time of bulk freight can also be shortened.

11. Remarks

None

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
P34	Access Channel Upgrade Project at Damietta Port

1. Objective of Project

- To provide two-way traffic for access channel, and
- To increase channel capacity.

2. Project Location

Damietta

3. Sector

- ☑ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Damietta Port Authority

5. Estimated Project Cost

LE 1,200 million

6. Project Priority

- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project

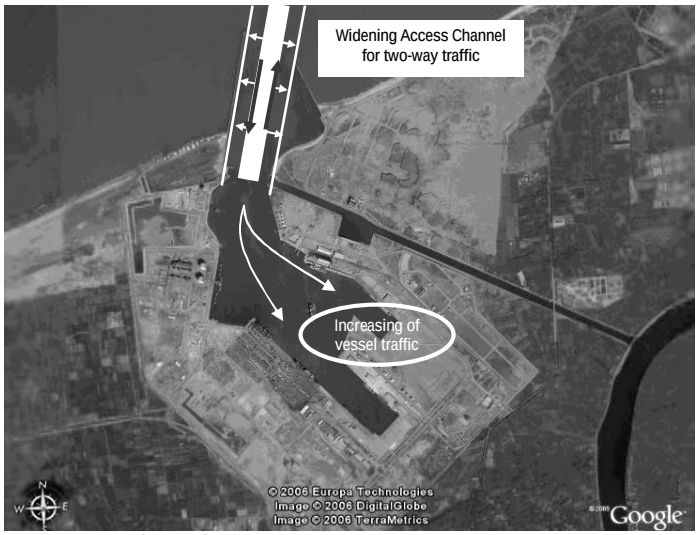
To accommodate increase of vessel traffic due to staring of KGL terminal, this project is to deepen and widen both inner and outer channels.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	-
- Regional/local economy:	-
- Cultural/historical heritage:	-
- Social vulnerable groups:	-
- Other social issues:	-
(2) Natural Environment	
- Plant:	-
- Animal:	-
- Ecosystem:	B
- Global warming:	-
(3) Pollution	
- Air pollution:	C
- Water quality:	B
- Soil contamination:	C
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



Source: Google Earth

10. Expected Impacts of Project

This project can also make it possible for over-8000 TEU vessels to come safely into this port, and can shorten the waiting time at anchor offshore, resulting more efficient vessel operation. Increase of large vessels can bring an increase in export/import container volume and a profit of the companies concerned. Function of International hub port can minimize an opportunity cost of transport via detour routes if this project would not implemented. All these can increase the manufacturers' production volume and GDP of Egypt.

11. Remarks

It is expected to affect aquatic ecosystems and water quality during construction and operation & maintenance stages. With environmental monitoring, potential measures to mitigate the negative impacts should be conducted. Since increase of vessel traffic may be caused adverse impacts including oil spill, the vessels should be equipped oil pumps or oil separators.

Project Profile Proposed by the JICA Study Team

Project No. P35

Project Title Container Yard Expansion Project at Port Said Port (West)

1. Objective of Project
- To increase terminal handling capacity

2. Project Location
Port Said Port (West)

3. Sector
- ☑ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency
Port Said Port Authority

5. Estimated Project Cost
LE 250 million

6. Project Priority
- ☐ Short term
- ☑ Medium term
- ☐ Long term

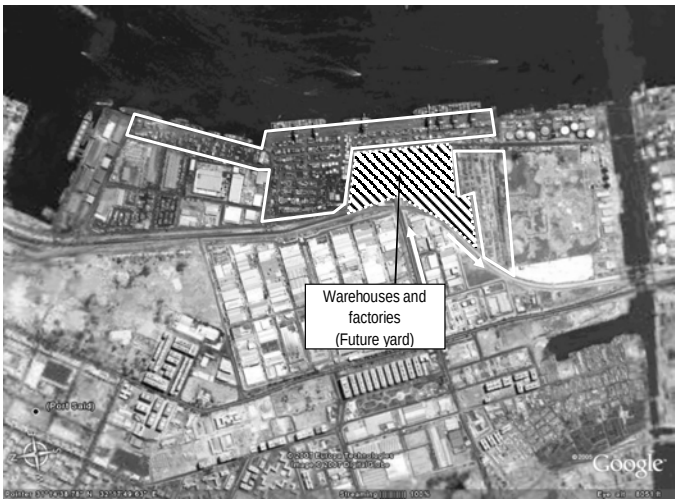
7. Brief Description of Project
This project aims to expand container yard in order to solve limited terminal handling capacity due to existing narrow container yard. The existing public road behind the terminal will be necessary to be reallocated.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	A
- Regional/local economy:	-
- Cultural/historical heritage:	-
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	-
- Animal:	-
- Ecosystem:	-
- Global warming:	-
(3) Pollution	
- Air pollution:	C
- Water quality:	C
- Soil contamination:	C
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



Source: Google Earth

10. Expected Impacts of Project
Expansion of container handling capacity can bring an increase in export/import container volume of newly developing manufacturing industries via port and an increase in financial earning of the companies concerned. It can also minimize an opportunity cost of transport via detour routes if this project would not implemented. All these can increase the manufacturers' production volume and GDP of Egypt.

11. Remarks
The proposed future yard is owned by the port authority and leased to private companies. It is necessary to compensate for them or to secure appropriate resettlement sites.

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
P36	Safaga Multipurpose Terminal Development Project

1. Objective of Project

- To enhance port facility in collaboration with industrial development in Upper Egypt

2. Project Location

Safaga Port

3. Sector

- ☑ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Red Sea Port Authority

5. Estimated Project Cost

LE 100 million

6. Project Priority

- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project

This Project is to build multi-purpose terminal including container handling facility to support import/export industry in Upper Egypt.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	B
- Regional/local economy:	C
- Cultural/historical heritage:	C
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	-
- Animal:	-
- Ecosystem:	A
- Global warming:	C
(3) Pollution	
- Air pollution:	C
- Water quality:	A
- Soil contamination:	C
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout

Source: Google Earth

10. Expected Impacts of Project

This project can provide new export route of the local products and can contribute to access to new remote markets, resulting in a promotion of the new industry (especially agro-products) and in a contribution of lifting the living standard of people in the Upper Egypt region.

11. Remarks

There are some residences along coastal line in the future development site for Safaga Port. In case that resettlement can not be avoided, necessary mitigation measures should be conducted. Since the project site is adjacent to coral reef area with various aquatic ecosystems. In the feasibility study or design stage, detail environmental surveys should be conducted in order to be avoided or minimized the negative impacts.

Project Profile Proposed by the JICA Study Team

Project No.
R9

Project Title
6th of October Direct Access Line Construction Project

1. Objective of Project
- To provide shorter and strong connection between Alexandria port and 6th of October city, and
- To provide direct railway access to 6th of October Industrial Zone.

2. Project Location
6th of October, Giza Governorate

3. Sector
- ☐ Sea Port
- ☐ Road
- ☑ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency
Egyptian National Railway

5. Estimated Project Cost
LE 240 million

6. Project Priority
- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project
This line will provide a direct access from Alexandria Port to 6th of October Industrial Zone. The line will begin from Barkash to 6th of October. The total length of this recommended link is about 24 kilometers that runs mostly in desert land.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	C
- Regional/local economy:	C
- Cultural/historical heritage:	C
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	C
- Animal:	-
- Ecosystem:	-
- Global warming:	-
(3) Pollution	
- Air pollution:	C
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout

Source: Google Earth

10. Expected Impacts of Project
This project can secure the safe and punctual delivery of massive quantity freight from various sea ports to the major industrial zone in Egypt, resulting in saving in transport time and cost of truck services in total, and a benefit both to the manufacturing companies concerned and consumers. Further activation or expansion of manufacturing activities can be expected. This project can also contribute to the modal shift from truck services that can bring the traffic jam of the road traffic and endless road investment in the future.

11. Remarks
None

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
R10	Burg El-Arab Access Line Construction Project

1. Objective of Project

- To integrate the industrial area of Burg El-Arab to the Railway Corridor, and
- To provide direct access between Burg El-Arab and Alexandria port.

2. Project Location

Burg El-Arab, Al Iskandariya Governorate

3. Sector

- ☐ Sea Port
- ☐ Road
- ☑ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Egyptian National Railway

5. Estimated Project Cost

LE 750 million

6. Project Priority

- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project

In order to integrate the existing and new urban, industrial and agricultural areas, Burg el-Arab will be connected to the national railway network. This new link provides will connect Burg el-Arab to Alexandria through Matrouh Line.

The project includes dualization of existing track with the length of 7.5 km. This will be extended for another 22.5 kilometers to the industrial area south of New Burg El-Arab City. In addition, the signalization and communication system of the line will be installed.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	C
- Regional/local economy:	C
- Cultural/historical heritage:	C
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	C
- Animal:	-
- Ecosystem:	-
- Global warming:	-
(3) Pollution	
- Air pollution:	C
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout

Source: Google Earth

10. Expected Impacts of Project

This project can secure the safe and punctual delivery of massive quantity freight from various sea ports to the major industrial zone in Egypt, resulting in saving in transport time and cost of truck services in total, and a benefit both to the manufacturing companies concerned and consumers. Further activation or expansion of manufacturing activities can be expected. This project can also contribute to the modal shift from truck services that can bring the traffic jam of the road traffic and endless road investment in the future.

11. Remarks

None

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
R11	Sadat City Access Line Construction Project

1. Objective of Project

- To integrate the industrial area of Sadat city to the Railway corridor, and
- To promote modal shift by providing alternative transport mode.

2. Project Location

Sadat City, Minufiya Governorate

3. Sector

- ☐ Sea Port
- ☐ Road
- ☑ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Egyptian National Railway

5. Estimated Project Cost

LE 190 million

6. Project Priority

- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project

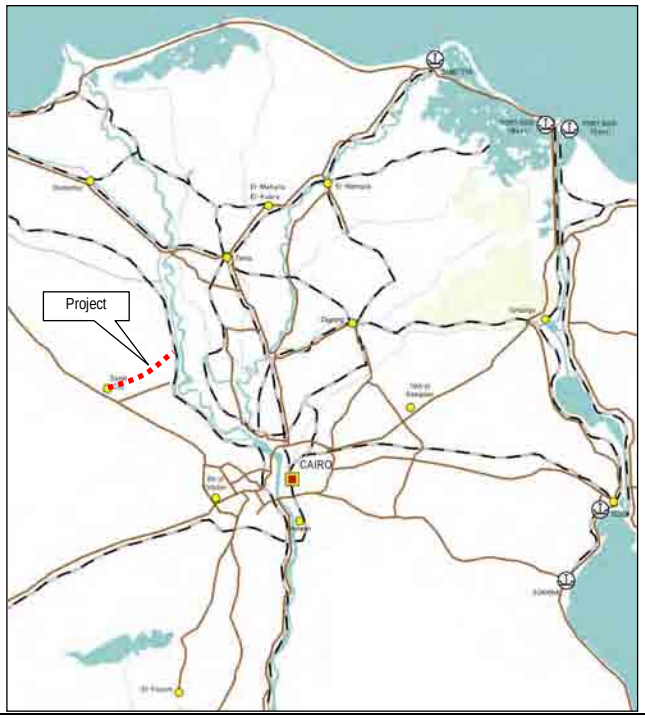
This project aims to connect the industrial area of Sadat city to the railway network that will run about 35 km. This access line will branch out from Eitai El-Baroud – Imbaba Line at Km 66+700.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	C
- Regional/local economy:	C
- Cultural/historical heritage:	C
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	C
- Animal:	-
- Ecosystem:	-
- Global warming:	-
(3) Pollution	
- Air pollution:	C
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



10. Expected Impacts of Project

This project can secure the safe and punctual delivery of massive quantity freight from various sea ports to this industrial zone, resulting in saving in transport time and cost by truck in total and a benefit both of the manufacturing companies concerned and consumers. This project can also contribute to the modal shift from truck services that can bring the traffic jam of the road traffic and endless road investment in the future.

11. Remarks

None

Project Profile Proposed by the JICA Study Team

Project No.
R12

Project Title
10th of Ramadan Direct Access Line Construction Project (Bilbeis – 10th of Ramdan)

1. Objective of Project
- To promote modal shift by providing alternative mode, and
- To enhance strong economic linkage of 10th of Ramadan with Sokhna Port, Damietta Port and Port Said Port (East and West).

2. Project Location
10th of Ramadan, Sharqiya Governorate

3. Sector
- ☐ Sea Port
- ☐ Road
- ☑ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency
Egyptian National Railway

5. Estimated Project Cost
LE 250 million

6. Project Priority
- ☐ Short term
- ☑ Medium term
- ☐ Long term

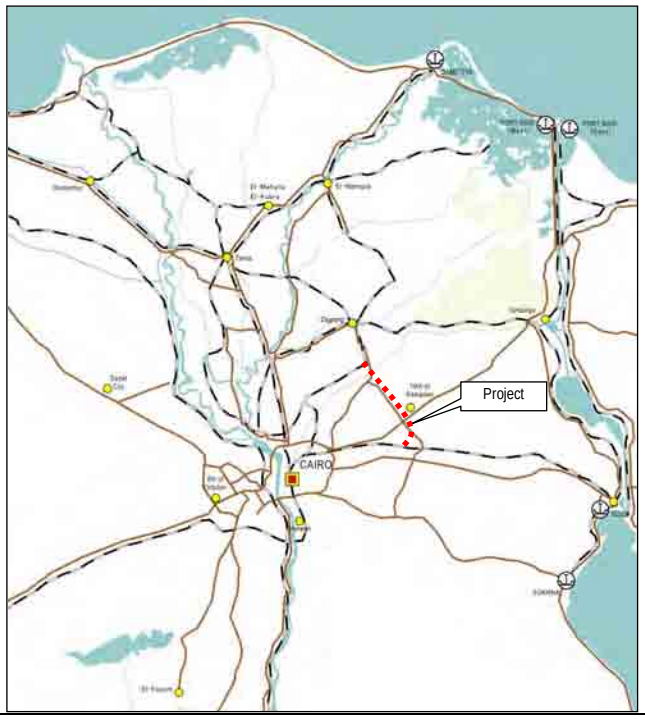
7. Brief Description of Project
This project which has a length of about 30 km will connect the two existing railway lines (Zagazig - Qalyub Line and Suez – Ain Shams Line). The line will run through the industrial area of the 10th of Ramadan to support the export/import industry which has been relying to trucks to transport of their products and materials.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	C
- Regional/local economy:	C
- Cultural/historical heritage:	C
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	C
- Animal:	-
- Ecosystem:	-
- Global warming:	-
(3) Pollution	
- Air pollution:	C
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



10. Expected Impacts of Project
This project can secure the safe and punctual delivery of massive quantity freight from various sea ports to the major industrial zone in Egypt, resulting in saving in transport time and cost of truck services in total, and a benefit both to the manufacturing companies concerned and consumers. Further activation or expansion of manufacturing activities can be expected. This project can also contribute to the modal shift from truck services that can bring the traffic jam of the road traffic and endless road investment in the future.

11. Remarks
None

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
R13	Railway Improvement Project (Ferdan - Port Said Port East)

1. Objective of Project

- To provide strong linkage by enhancing railway transport

2. Project Location

Port Said

3. Sector

- ☐ Sea Port
- ☐ Road
- ☑ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Egyptian National Railway

5. Estimated Project Cost

LE 550 million

6. Project Priority

- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project

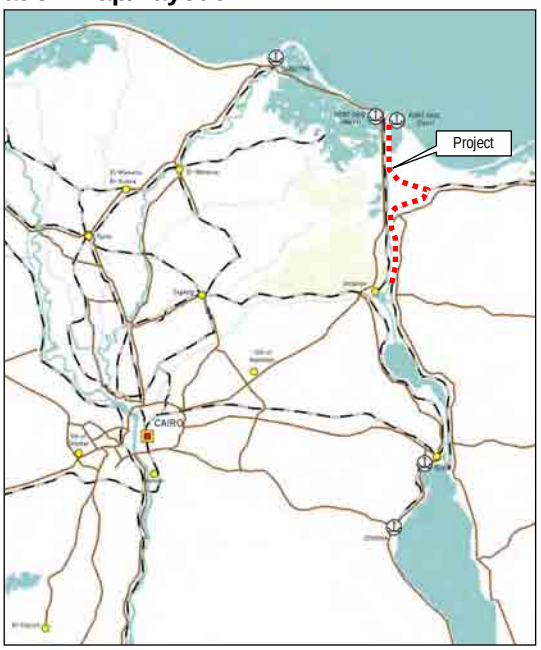
In order to serve significantly increasing cargo volumes at Port Said Port (East), the project aims at improvement of communication and other facilities between Ferdan – Port Said Port (East).

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	C
- Regional/local economy:	C
- Cultural/historical heritage:	C
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	C
- Animal:	-
- Ecosystem:	-
- Global warming:	-
(3) Pollution	
- Air pollution:	C
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



10. Expected Impacts of Project

This project can secure the sate and punctual delivery of massive quantity freight from various sea ports to the major industrial zone in Egypt, resulting in saving in transport time and cost by truck in total, and benefit both to the manufacturing companies concerned and consumers. Further strengthening of economic linkage among industrial zones can be expected by trading their products among major industrial zones as well as an activation or expansion of manufacturing activities, which means that a scale of economy can be expected. This project can also contribute to the modal shift from truck services that can bring the traffic jam of the road traffic and endless road investment in the GCR.

11. Remarks

None

Project Profile Proposed by the JICA Study Team

Project No. R14

Project Title Reefer Container and Facility Project

1. Objective of Project

- To promote containerization by improving railway transport

2. Project Location

Upper Egypt

3. Sector

- ☐ Sea Port
- ☐ Road
- ☑ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Egyptian National Railway

5. Estimated Project Cost

LE 10 million

6. Project Priority

- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project

This project is to install wagons and necessary facilities to handle container cargoes in order to provide efficient container transport.

8. Environmental and Social Impacts

(1) Social Environment
- Involuntary resettlement: -
- Regional/local economy: -
- Cultural/historical heritage: -
- Social vulnerable groups: -
- Other social issues: -

(2) Natural Environment
- Plant: -
- Animal: -
- Ecosystem: -
- Global warming: -

(3) Pollution
- Air pollution: -
- Water quality: -
- Soil contamination: -
- Noise and vibration: -

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout

None

10. Expected Impacts of Project

This project can secure a long life of the agro-products especially fresh fruits and vegetables from the remote area, and can make it possible to export them. This can contribute to promote the agricultural development in the remote area to the big market such as the GCR and contribute to a lifting the standard of living of people there.

11. Remarks

None

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
W13	New River Port Construction Project near 6th of October

1. Objective of Project

- To promote modal shift by utilizing inland waterway transport, and
- To optimize utilization of inland river transport.

2. Project Location

Near 6th of October

3. Sector

- ☐ Sea Port
- ☐ Road
- ☐ Railway
- ☑ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

River Transport Authority

5. Estimated Project Cost

LE 60 million

6. Project Priority

- ☐ Short term
- ☐ Medium term
- ☑ Long term

7. Brief Description of Project

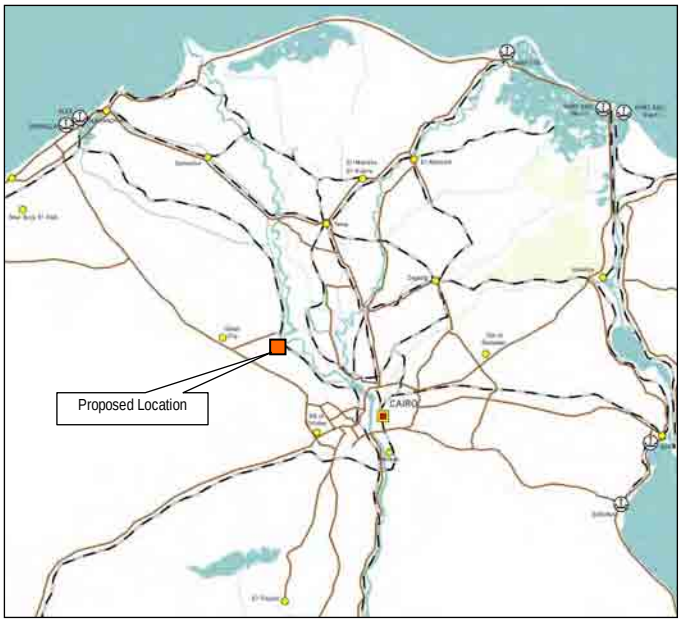
To enhance modal shift and to fully utilize the River Nile, it is important to construct a river port near to the industrial city of 6th of October. This port will allow the cargoes coming from Alexandria to be transport via the River Nile and will be transported by railway/trucks from/to the 6th of October, GCR and even upper Egypt in collaboration with 6th of October direct access line construction project.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	C
- Regional/local economy:	-
- Cultural/historical heritage:	-
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	C
- Animal:	-
- Ecosystem:	C
- Global warming:	-
(3) Pollution	
- Air pollution:	-
- Water quality:	B
- Soil contamination:	C
- Noise and vibration:	-

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



10. Expected Impacts of Project

This project can provide a massive quantity transportation mode at the cheapest cost of all the transportation modes, and link the sea ports in the country to the GCR (resulting in a reduction of transport cost at the major freight flow routes, and a benefit of the manufacturing industries). This also makes the potential benefit of investment cost by the government in the past to become tangible.

11. Remarks

During construction and operation & maintenance stages, oil, fuel and other chemicals used on site may pollute the adjacent river. It is necessary to monitor water quality through inspection.

Project Profile Proposed by the JICA Study Team

Project No. D4

Project Title Dry Port Development Project (17 location)

1. Objective of Project

- To provide connectivity to different transport mode with customs clearance and storage functions in Egypt

2. Project Location

Project Locations are shown in next page.

3. Sector

☐ Sea Port
☐ Road
☐ Railway
☐ Inland Waterway Transport
☑ Dry Port
☐ Logistics Center
☐ Customs
☐ Forwarding

4. Implementation Agency

Inland and Dry Ports Authority

5. Estimated Project Cost

LE 720 million

6. Project Priority

☐ Short term
☐ Medium term
☑ Long term

7. Brief Description of Project

In order to assist logistics activity, the dry ports will provide one of fundamental functions for export and import industry.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	C
- Regional/local economy:	C
- Cultural/historical heritage:	C
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	C
- Animal:	C
- Ecosystem:	C
- Global warming:	-
(3) Pollution	
- Air pollution:	-
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout

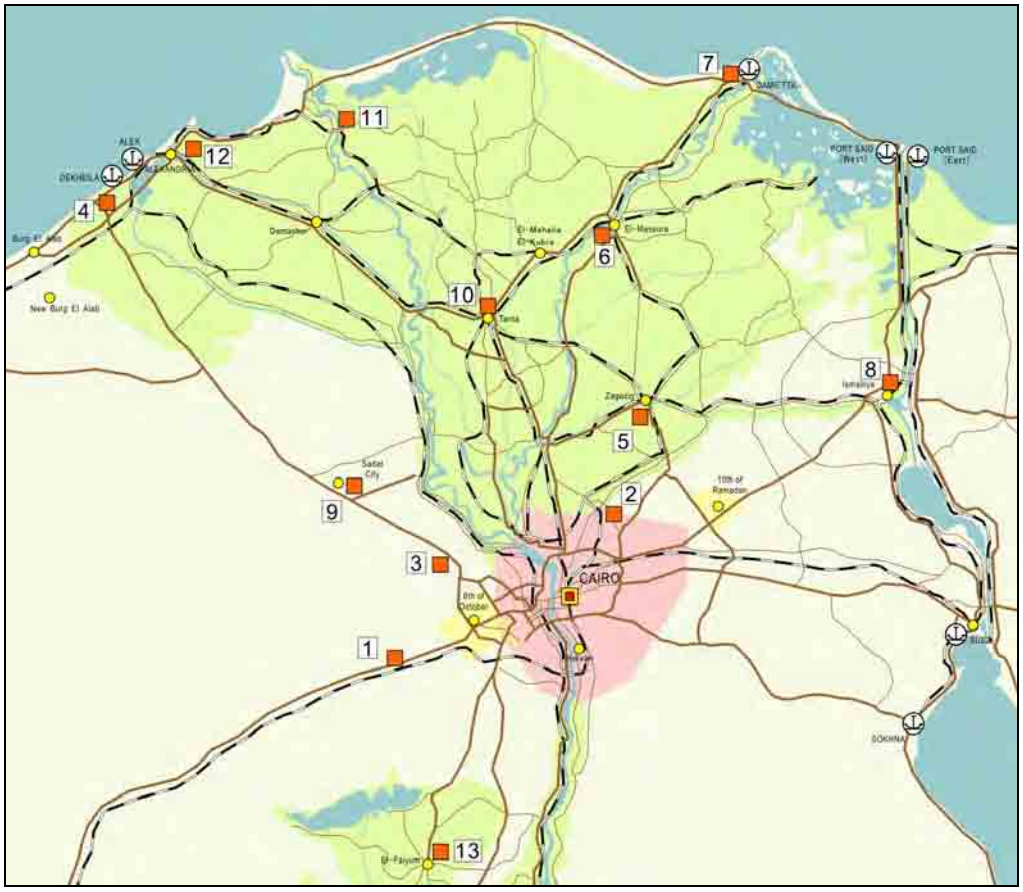
Location Map is shown in next page.

10. Expected Impacts of Project

This project can contribute to shorten the time for custom clearance in the industrial zones by avoiding the busy custom office in the sea ports, resulting in a quick and punctual delivery of the freight. This can also make it possible to conduct a supply chain management, a core logistics operation of the manufacturing companies that directly affect the production volume, sales performance, and profits. Expansion of total export/import of Egypt i.e. an increase of GDP can be expected.

11. Remarks

Additional Explanations for Development Concept of Dry Port are presented in Items 12 through 14.



Location Map of Dry Port in Nile Delta

Location of Dry Port	Project Cost (million LE)
1. Km 48 near 6th of October	82
2. Abu Zaabal	63
3. North West Cairo	64
4. El-Max	64
5. El Sharkiya	27
6. Daqahliya	31
7. Damietta Free Zone	20
8. Ismailia	27
9. Al-Sadat	27
10. Gharbiya	31
11. Matbous	20
12. El Beida	22
13. Fayoum	27
14. Asyut	41
15. Qena	58
16. Beni Suef	58
17. Aswan	58
Total	720

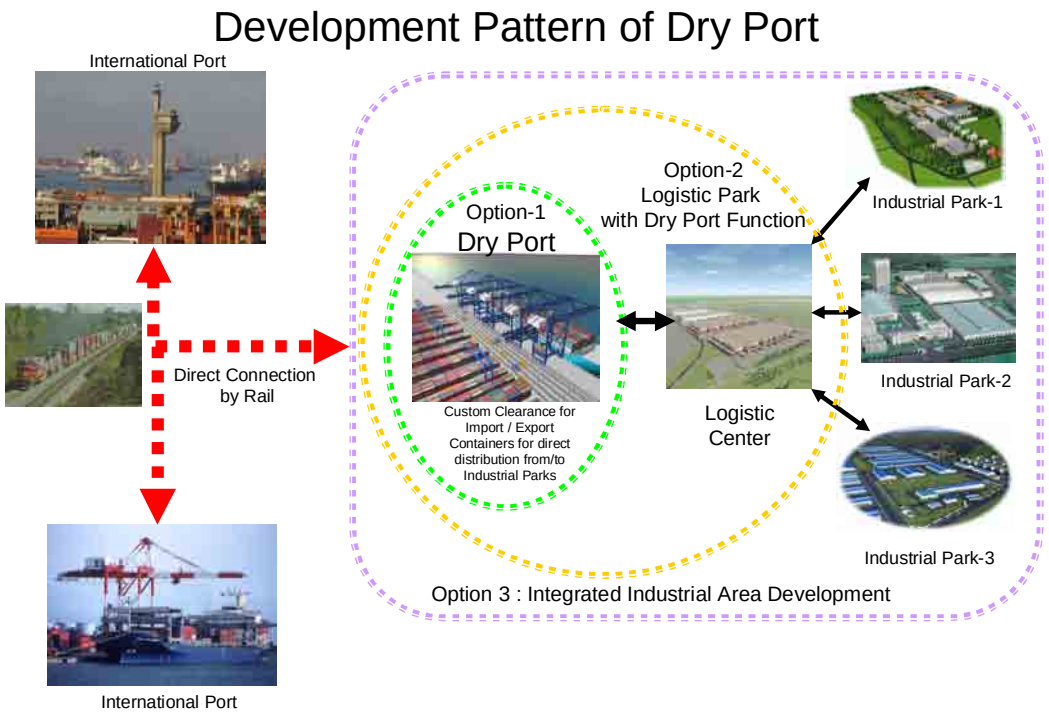
Location Map of Dry Port in Upper Egypt

12. Development Option of Dry Port Project

Currently, all the international ports are busy to handle the massive number of import/expert containers and most of them seem over capacity of handling particularly for custom clearance. Due to over capacity of the custom clearance at international ports, the freight transportation was staged for a long time at the port resulting the delay of freight transportation. The Dry Port will be required under such critical condition particularly for the private investors for export their products from GCR to the world.

The following patterns are considered for Dry Port Development Project:

- Option 1: Dry Port development along the existing railway route (usually at the ICD (Inland Container Depot)) with good access to several industrial parks,
- Option 2: Dry Port development together with the Logistic Park which should have direct access to international port and good accesses to the several industrial parks
- Option 3: Dry port is facilitated inside the large scale Industrial Park together with Logistic Centers, which could be considered at 6th of October or 10th of Ramadan.



13. Major Components of Dry Port Project

a) Container Yard
b) Container Freight Station
c) Railway Access
d) Main Gate to Road
e) Custom Clearance Office Buildings
f) Terminal Office / Site Office
g) Overtime Cargo Warehouse
h) Maintenance Shop
g) Washing Area
h) Power House
i) Parking Lots
j) Security Building and Box, and etc.

14. Financial Benefit of Dry Port

a) Custom Handling Charge from Government Offices
b) Service Charge from the Forwarders as the idling time for custom clearance is much shorter if Forwarders use the dry port for custom clearance instead of custom office at International Ports.
c) Service Charge from factories/trading companies for exporting products from Egypt.

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
L1	Logistics Center Development Project (6th of October)

1. Objective of Project

- To enhance export/import industry, and
- To facilitate logistics functions including sorting, labeling, packing and other value added activities.

2. Project Location

6th of October

3. Sector

- ☐ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☑ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Inland and Dry Ports Authority

5. Estimated Project Cost

LE 80 million

6. Project Priority

- ☑ Short term
- ☐ Medium term
- ☐ Long term

7. Brief Description of Project

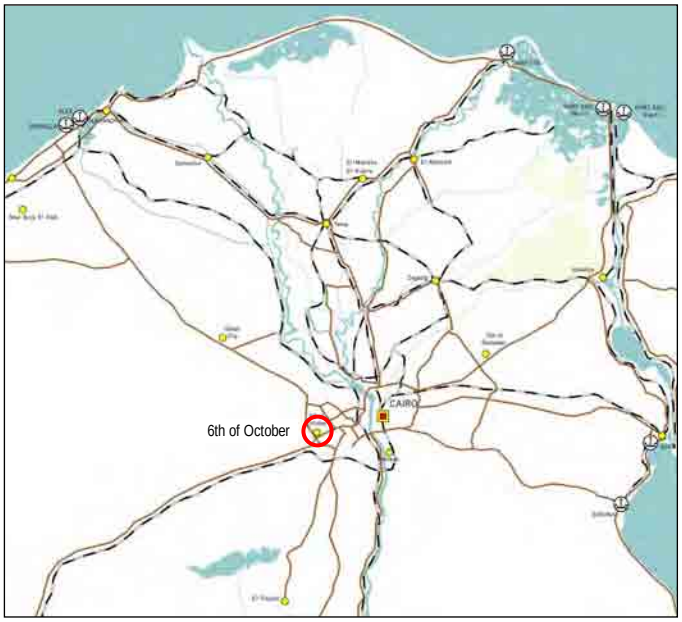
Development of the logistics center aims to support import/export promotion for 6th of October Industrial zone and to develop the total logistics system as a whole. This logistics center will offer value-added services such as repacking, labeling, bar-coding and other high-value activities.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	C
- Regional/local economy:	C
- Cultural/historical heritage:	C
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	C
- Animal:	C
- Ecosystem:	C
- Global warming:	-
(3) Pollution	
- Air pollution:	-
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



10. Expected Impacts of Project

This project can contribute to shorten the time for custom clearance and a delivery, resulting in a quick and punctual delivery of the freight as well as the benefit accruing to the various value added activities such as storing, light processing/assembling, re-packing.

This can also make it possible to conduct a supply chain management, which directly affects the production volume, sales performance, and profits. Expansion of total export/import of Egypt i.e. an increase of GDP can be expected.

In total, this project can contribute to a rationalization of logistics flows and expansion of total freight handling capacity near the GCR both for the manufactures and consumers.

11. Remarks

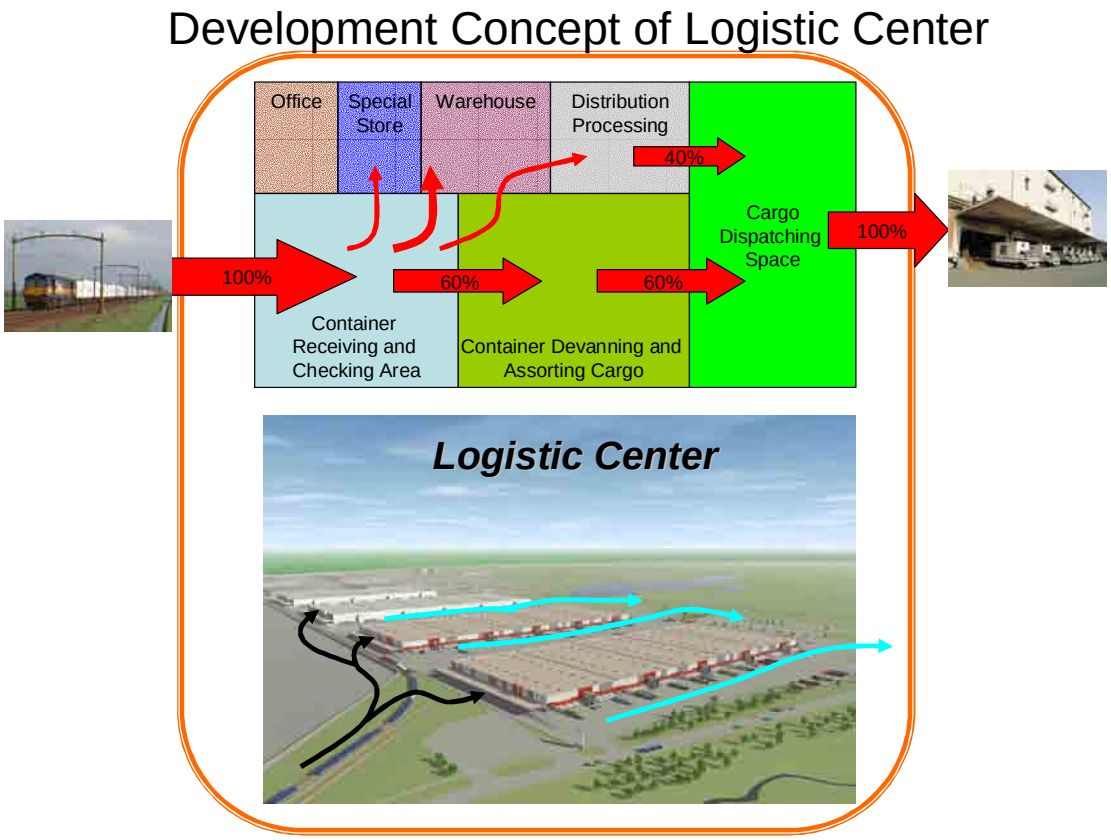
More details to refer items 12 through 14 in the following page.

12. Development Concept of Logistic Center Development Project

Expected functions of Logistic Center are as follows:

1) To mitigate dis-advantages time lag between production and consumption of the products, which could be adjusted by throughput the logistic center.
2) To improve stock management to minimizing stock time and space,
3) To carry out order picking system by re-packing the container cargo as required by the customers
3) To improve security of stock management as required by the customers
4) To minimize the total cost of cargo transportation

The followings are the general layout of Logistic Center:



13. Major Components of Logistic Center

a) Railway Access
b) Access to Road Network
c) Custom Clearance Function (Optional)
d) Cargo Receiving / Checking Yard
e) Office Buildings
f) Special Products store house
g) Warehouse
h) Distribution processing building/yard
g) Cargo Dispatching Yard
h) Access road to Road Network
i) Parking Lots
j) Security Building and Box, and etc.

14. Financial Benefit of Logistic Center

a) Custom Handling Charge from Government Offices (Optional)
b) Service Charge for store / re-packing / Processing for distribution from the customers
c) Security service and cargo transportation monitoring service for the customers

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
L2	Logistics Center Development Project (10th of Ramadan)

1. Objective of Project

- To enhance export/import industry, and
- To facilitate logistics functions including sorting, labeling, packing and other value added activities.

2. Project Location

10th of Ramadan

3. Sector

- ☐ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☑ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Inland and Dry Ports Authority

5. Estimated Project Cost

LE 80 million

6. Project Priority

- ☑ Short term
- ☐ Medium term
- ☐ Long term

7. Brief Description of Project

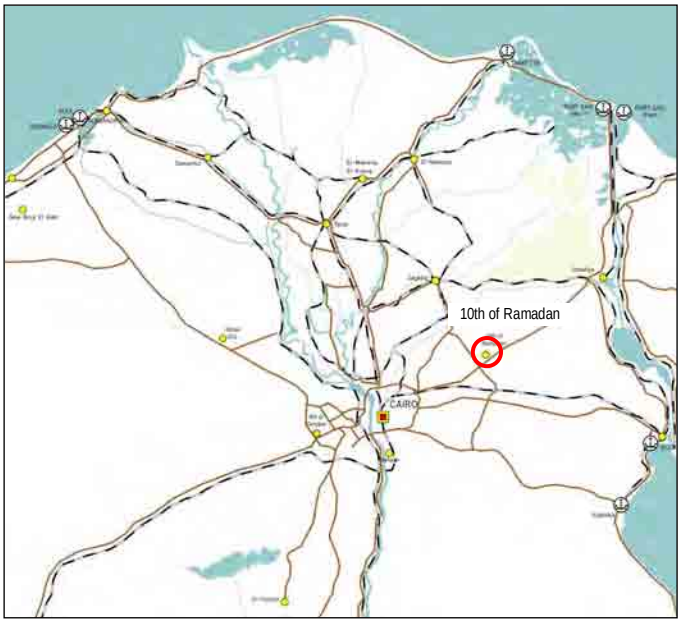
This project is to develop a logistics center in 10th of Ramadan which is a strategic location between GCR and container handling ports such as Damietta Port, Port Said Port (West & East) and Sokhna Port. The logistics center will serve comprehensive logistics function to optimize business activities and to load/unload between truck and railway.

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	C
- Regional/local economy:	C
- Cultural/historical heritage:	C
- Social vulnerable groups:	C
- Other social issues:	C
(2) Natural Environment	
- Plant:	C
- Animal:	C
- Ecosystem:	C
- Global warming:	-
(3) Pollution	
- Air pollution:	-
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



10. Expected Impacts of Project

This project can contribute to shorten the time for custom clearance and a delivery, resulting in a quick and punctual delivery of the freight as well as the benefit accruing to the various value added activities such as storing, light processing/assembling, re-packing.

This can also make it possible to conduct a supply chain management, which directly affects the production volume, sales performance, and profits. Expansion of total export/import of Egypt i.e. an increase of GDP can be expected.

In total, this project can contribute to a rationalization of logistics flows and expansion of total freight handling capacity near the GCR both for the manufactures and consumers.

11. Remarks

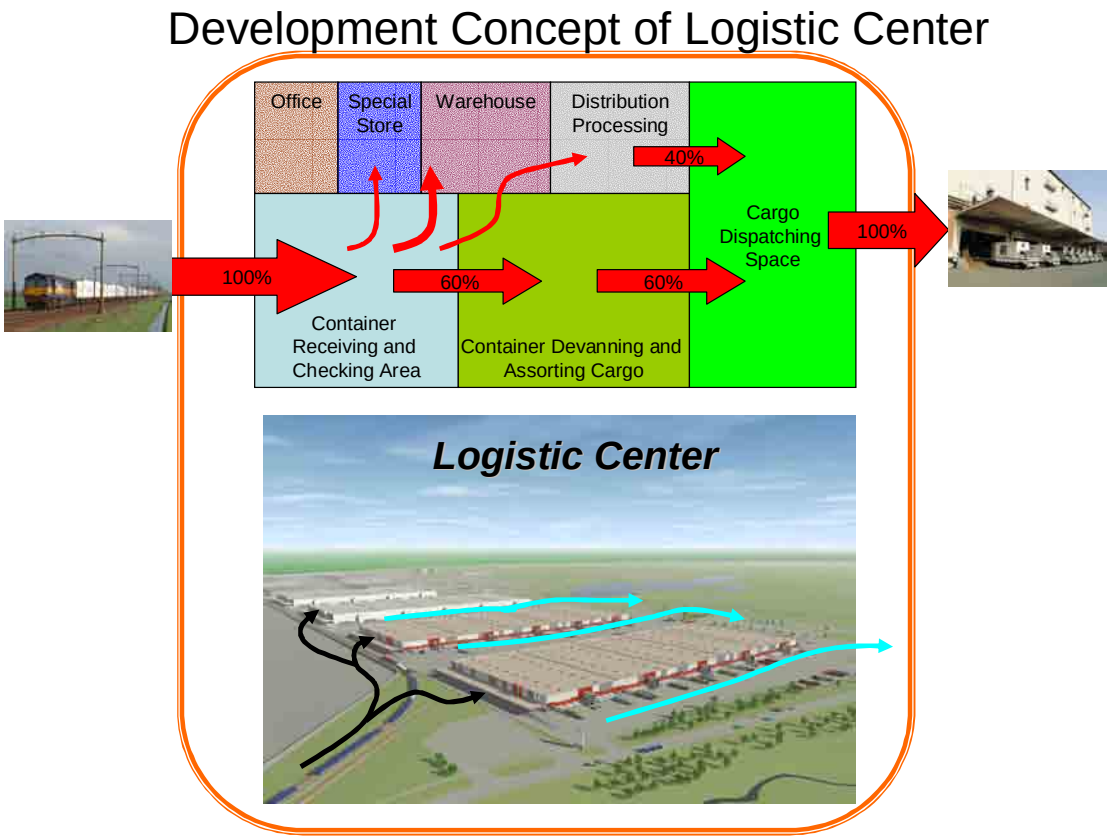
More details to refer items 12 through 14 in the following page.

12. Development Concept of Logistic Center Development Project

Expected functions of Logistic Center are as follows:

1) To mitigate dis-advantages time lag between production and consumption of the products, which could be adjusted by throughput the logistic center.
2) To improve stock management to minimizing stock time and space,
3) To carry out order picking system by re-packing the container cargo as required by the customers
3) To improve security of stock management as required by the customers
4) To minimize the total cost of cargo transportation

The followings are the general layout of Logistic Center:



13. Major Components of Logistic Center

a) Railway Access
b) Access to Road Network
c) Custom Clearance Function (Optional)
d) Cargo Receiving / Checking Yard
e) Office Buildings
f) Special Products store house
g) Warehouse
h) Distribution processing building/yard
g) Cargo Dispatching Yard
h) Access road to Road Network
i) Parking Lots
j) Security Building and Box, and etc.

14. Financial Benefit of Logistic Center

a) Custom Handling Charge from Government Offices (Optional)
b) Service Charge for store / re-packing / Processing for distribution from the customers
c) Security service and cargo transportation monitoring service for the customers

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
L3	Logistics Center Development Project (Port Said East)

1. Objective of Project

- To enhance export/import industry,
- To facilitate logistics functions including sorting, labeling, packing and other value added activities, and
- To support Port Said Port (East) as hub port.

2. Project Location

Port Said Port (East)

3. Sector

- ☐ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☑ Logistics Center
- ☐ Customs
- ☐ Forwarding

4. Implementation Agency

Inland and Dry Ports Authority

5. Estimated Project Cost

LE 80 million

6. Project Priority

- ☑ Short term
- ☐ Medium term
- ☐ Long term

7. Brief Description of Project

By developing a logistics center at Port Said Port (East), it is expected to meet the needs for value added logistics (VAL) services. The logistics center will provide value-added services such as repacking, labeling, bar-coding and other high-value activities. The location of the logistics center will be in the industrial area proposed by existing Master Plan of Port Said (East).

8. Environmental and Social Impacts

(1) Social Environment	
- Involuntary resettlement:	-
- Regional/local economy:	-
- Cultural/historical heritage:	-
- Social vulnerable groups:	-
- Other social issues:	-
(2) Natural Environment	
- Plant:	C
- Animal:	C
- Ecosystem:	C
- Global warming:	-
(3) Pollution	
- Air pollution:	-
- Water quality:	-
- Soil contamination:	-
- Noise and vibration:	C

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout

Source: Google Earth

10. Expected Impacts of Project

This project can contribute to shorten the time for delivery, resulting in a quick and punctual delivery of the freight as well as the benefit accruing to the various value added activities such as storing, light processing/assembling, re-packing. This can attract more number of vessels to the port and can increase the total freight handling volume.

This can also make it possible to conduct a supply chain management by the manufacturing companies in the industrial zone just behind the port, which directly affects the production volume, sales performance, and profits. Expansion of total export/import of Egypt i.e. an increase of GDP can be expected.

In total, this project can contribute to a rationalization of logistics flows near the GCR for the manufactures.

11. Remarks

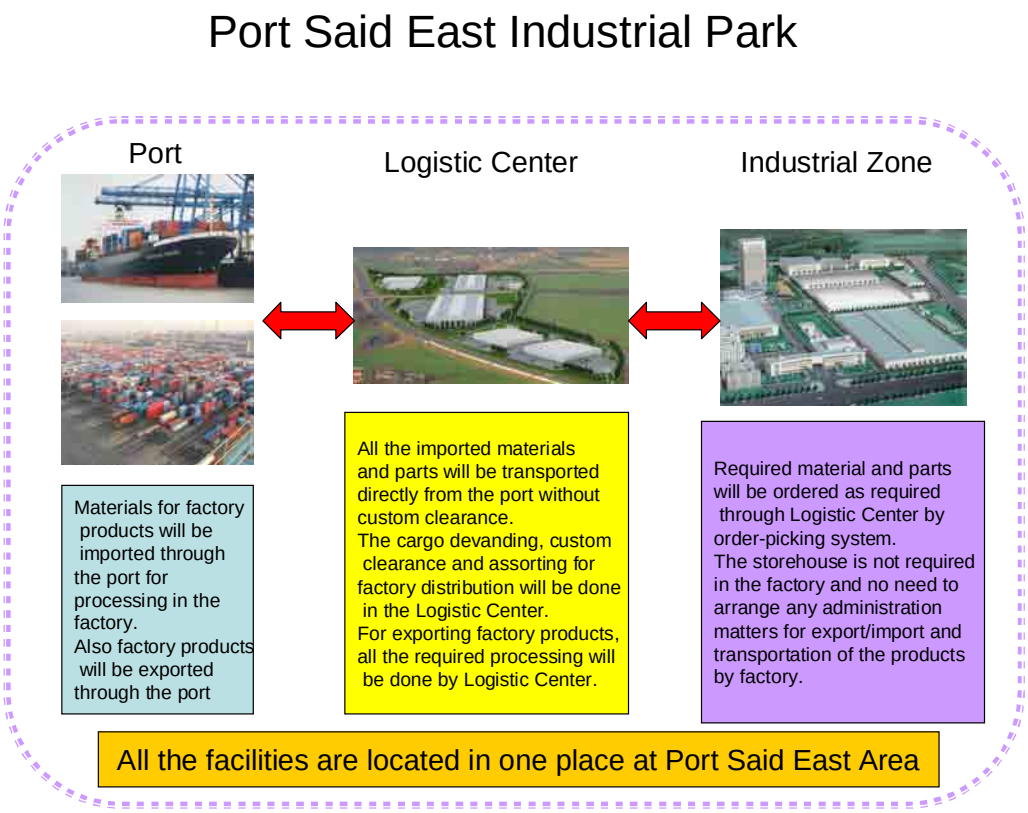
None

12. Development Concept of Logistic Center Development Project

Logistic Center at Port Said East has the following characteristics:

1) This is the integrated industrial park, which international port, custom office, logistic functions and industrial zone are located in one place.
2) The functions of logistic center are; a) custom clearance for export/import, b) cargo devanding / assorting for order picking and delivery to factory as required, c) container vanding for factory products and processing for export.
3) As the industrial area is located adjacent to the international port, the factories in the zone will be suitable for the export products.

The followings are the general concept of Logistic Center at Port Said East:



13. Major Components of Logistic Center

a) Access to Port
b) Access to Industrial Zone
c) Custom Clearance Function
d) Cargo Receiving / Checking Yard
e) Office Buildings
f) Special Products store house
g) Warehouse
h) Distribution processing building/yard
i) Cargo Dispatching Yard
j) Parking Lots
k) Security Building and Box, and etc.

14. Financial Benefit of Logistic Center

a) Custom Handling Charge from Government Offices
b) Service Charge for store / re-packing / Processing for distribution from the customers
c) Security service and cargo transportation monitoring service for the customers

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
C1	Single Window System Establishment Supplemental Project (Sea Ports)

1. Objective of Project

- To support Single Window System in sea ports in order to shorten the time of releasing the import/export goods.

2. Project Location

Alexandria Port, Dekheila Port, Damietta Port, Port Said Port (west & East), Sokhna Port

3. Sector

- ☐ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☑ Customs
- ☐ Forwarding

4. Implementation Agency

Each Port Authority

5. Estimated Project Cost

LE 50 million

6. Project Priority

- ☑ Short term
- ☐ Medium term
- ☐ Long term

7. Brief Description of Project

Though the most of equipments and facilities are installed in the ports, it is necessary to maintain through monitoring from user's point of view. This project is to support operation and maintenance for customs clearance, inspection and testing by installing necessary equipments.

8. Environmental and Social Impacts

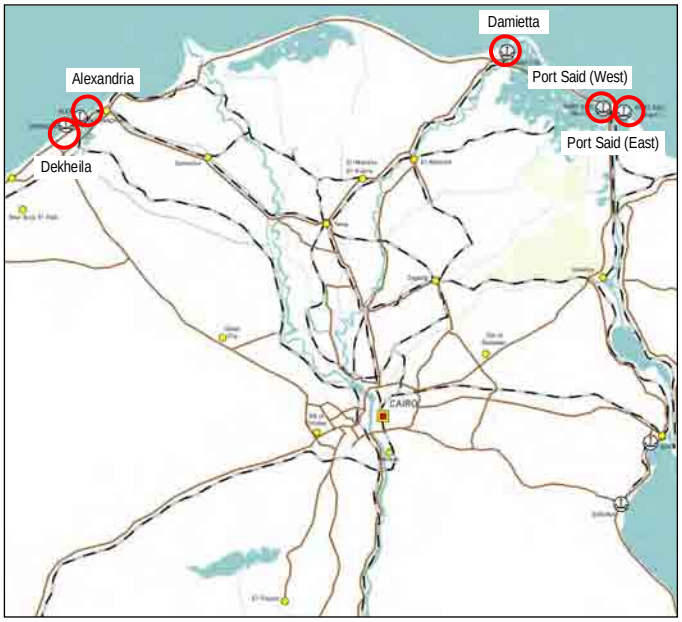
(1) Social Environment
- Involuntary resettlement: -
- Regional/local economy: -
- Cultural/historical heritage: -
- Social vulnerable groups: -
- Other social issues: -

(2) Natural Environment
- Plant: -
- Animal: -
- Ecosystem: -
- Global warming: -

(3) Pollution
- Air pollution: -
- Water quality: -
- Soil contamination: -
- Noise and vibration: -

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



10. Expected Impacts of Project

This project can secure the non-interrupted operation of custom clearance and procedures, and contribute to an improvement of operation efficiency. This can result in the increase of export/import handling volume in total, and contribute to the expansion of manufacturing sector in Egypt.

11. Remarks

None

Project Profile Proposed by the JICA Study Team

Project No.	Project Title
C2	Single Window System Establishment Project (Dry Ports)

1. Objective of Project

- To establish Single Window System in dry ports in order to shorten the procedure.

2. Project Location

Dry Ports in Egypt

3. Sector

- ☐ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☑ Customs
- ☐ Forwarding

4. Implementation Agency

Inland and Dry Ports Authority

5. Estimated Project Cost

LE 10 million

6. Project Priority

- ☐ Short term
- ☑ Medium term
- ☐ Long term

7. Brief Description of Project

With the establishment of Single Window System, one stop service will be able to be provided by collaborating with Customs Authority and General Organization for Exports and Imports Control (GOEIC).

8. Environmental and Social Impacts

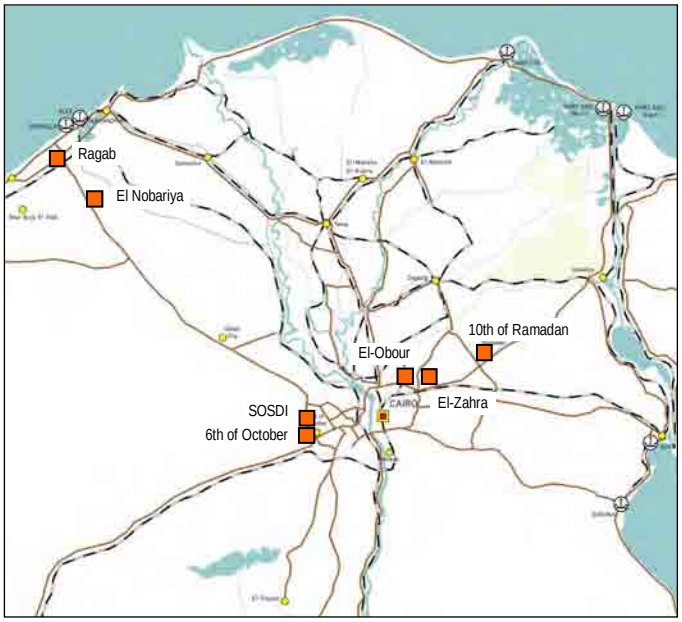
(1) Social Environment
- Involuntary resettlement: -
- Regional/local economy: -
- Cultural/historical heritage: -
- Social vulnerable groups: -
- Other social issues: -

(2) Natural Environment
- Plant: -
- Animal: -
- Ecosystem: -
- Global warming: -

(3) Pollution
- Air pollution: -
- Water quality: -
- Soil contamination: -
- Noise and vibration: -

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



10. Expected Impacts of Project

This project of dry port modernization can contribute to attract more users to the dry port in the industrial zones by shortening the time for custom clearance. This can also make it possible to conduct a supply chain management, a core logistics operation of the manufacturing companies that directly affect the production volume, sales performance, and profits. Expansion of total export/import of Egypt i.e. an increase of GDP can be expected.

11. Remarks

None

Project Profile Proposed by the JICA Study Team

Project No. F1

Project Title Pilot Project on Radio Frequency Identification (RFID) system

1. Objective of Project

- To realize traceability and security from the viewpoint of facilitating trade in international market

2. Project Location

Alexandria Port, Dekheila Port, Damietta Port, Port Said Port (west & East)

3. Sector

- ☐ Sea Port
- ☐ Road
- ☐ Railway
- ☐ Inland Waterway Transport
- ☐ Dry Port
- ☐ Logistics Center
- ☐ Customs
- ☑ Forwarding

4. Implementation Agency

Each Port Authority

5. Estimated Project Cost

LE 60 million

6. Project Priority

- ☑ Short term
- ☐ Medium term
- ☐ Long term

7. Brief Description of Project

This project is to implement a pilot project by using IC tags to improve logistics efficiency in major ports which handle container cargoes. By exchanging information/data on IC tags through internet, logistics process will be improved.

8. Environmental and Social Impacts

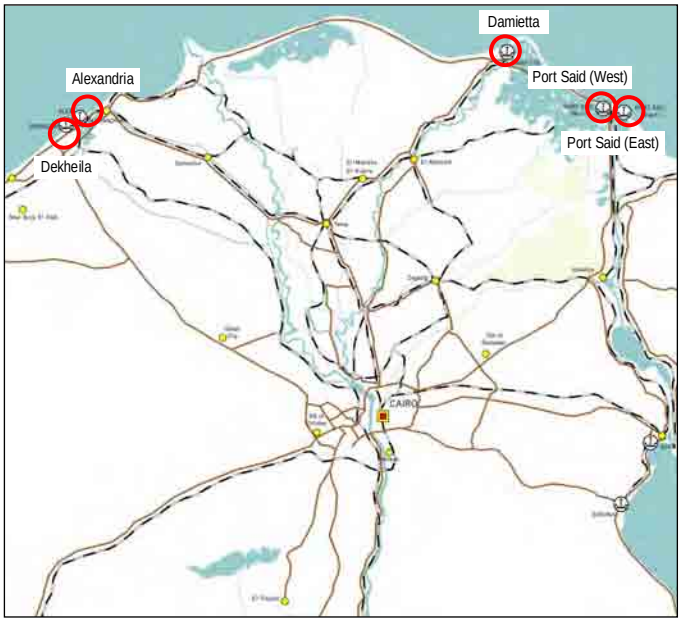
(1) Social Environment
- Involuntary resettlement: -
- Regional/local economy: -
- Cultural/historical heritage: -
- Social vulnerable groups: -
- Other social issues: -

(2) Natural Environment
- Plant: -
- Animal: -
- Ecosystem: -
- Global warming: -

(3) Pollution
- Air pollution: -
- Water quality: -
- Soil contamination: -
- Noise and vibration: -

Note:
A: Significant negative impact expected
B: Negative impact expected
C: Unknown in this study stage (further study necessary)
-: No impact expected

9. Location Map/Layout



10. Expected Impacts of Project

This pilot project can explore the measures to introduce the Radio Frequency Identification (RFID) System smoothly over the country. Through this pilot project, the un-expected failure and/or trouble in an introduction and operation of RFID system can be explored and avoided (saving in opportunity loss and wasted investment and preparatory time of all the forwarding companies). This can contribute to a reliability of RFID and can turn the forwarding industry of Egypt more competitive in the international market, resulting in business expansion and an increase in profits.

11. Remarks

None