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Trade facilitation for landlocked developing countries : a case study of the Palestinian economy

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TRADE FACILITATION FOR LANDLOCKED DEVELOPING COUNTRIES: A CASE STUDY OF THE PALESTINIAN ECONOMY

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PALESTINE

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DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

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ABSTRACT

Title of Dissertation: **Trade facilitation for landlocked developing countries: A case study of the Palestinian territories**

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Trade facilitation is important to ease the challenges facing landlocked countries such as geographical obstacles, infrastructure level and information and communication technology. More specifically, the main barriers causing slow economic growth are the border crossings, customs and security inspections.

The Palestinian economy is effectively landlocked, although the Gaza strip on the Mediterranean Sea has a 60 Km long shore. The Palestinian territories have since 2000 effectively been isolated from the rest of the world due to the closure policy imposed by the Israeli government

This dissertation outlines problems affecting trade facilitation in the Palestinian Territories, and makes some suggestions that could help to solve those problems. Well established and developed border crossing logistics enhance cost effective, secure and efficient services

The future of the Palestinian economy depends mainly on the enhancement of the trade logistics system, which permits a secure, reliable and competitive trading environment. Gaza Seaport would be a cornerstone for economic development of Palestine. The construction of Gaza Seaport by the Palestinian Authority would enable direct access to the market, and as a result would be the growth engine of the Gaza Strip and the West Bank economy to expand and diversify foreign trade and stimulate growth in the external trade oriented industries. Moreover, the territorial link between the two separated regions of the Palestinian territory should be established as soon as possible to guarantee full economic integration.

Lastly, trade facilitation is the only torch that could light the way for the Palestinian economy to recover and achieve a competitive position.

KEYWORDS: Landlocked countries, Trade facilitation, Border crossings, Supply chain security, Closure policy, Multimodal Transport, Palestine

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ABBREVIATIONS

ACES	Automated Cargo Expediting System
ACIS	Advance Cargo Information System
AMA	Agreement on Movement and Access
ASYCUDA	Automated System for Customs Data Analysis
EDI	Electronic Data Interchange
EFTA	European Free Trade Association
ESCWA	United Nations Economic and Social Commission for Western Africa
GDP	Gross Domestic Product
GNI	Gross National Income
GNP	Gross National Product
ICT	Information and Communication Technology
JIT	Just In Time
LDCs	Least Developed Countries
LLDCs	Landlocked Developing Countries
MT	Multimodal Transport
MTD	Multimodal Transport Document
MTO	Multimodal Transport Operator
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OECD	Organisation for Economic Co-operation and Development
PA	Palestinian Authority
PCBS	Palestinian Central Bureau of Statistics
PNA	Palestinian National Authority
SCCT	Suez Canal Container Terminal
SMEs	Small and Medium Size Enterprises
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
WCO	World Customs Organization
WTO	World Trade Organization

CHAPTER ONE

1 INTRODUCTION

1.1 Overview

Landlocked countries are faced with a unique situation that resists the response to trade facilitations such as the geographical obstacles, the level of infrastructure and the information and communication technology in facilitating the trade. The main barriers causing the slow economic growth are the border crossings, customs and security inspections.

The Palestinian economy is effectively landlocked, although the Gaza strip on the Mediterranean Sea has a 60 Km long shore. The Palestinian territories have since 2000 effectively been isolated from the rest of the world due to the closure policy imposed by the Israeli government. In addition, the Israeli control over the main borders and transport routes is creating a complete dependency of trade on the political conditions. Moreover, the Palestinian dependency on Israeli port facilities for exports and imports have resulted in high transaction cost and unreliable logistics with the security measures at the border crossings and customs clearance having rendered trade difficult and hampered its growth.

The most effective solution to integrate the Palestinian economy with the region and the rest of the world is to have a seaport in Gaza, but the conflict and instability in the region will effect and delay the construction of the seaport. For that it is essential to explore other alternatives for facilitating the flow of the Palestinian trade until the construction of the Gaza seaport. Consequently, the Palestinian Authority should improve and develop the transport infrastructure, especially the road and border crossing facilities.

The consideration of diversifying the trade partners could be one of the alternatives for facilitation of the flow of goods to the Palestinian territory to balance the relation with Israel through greater regional integration, enhancing multimodal transport.

1.2 Problem identification and objective of the study

The multiple obstacles and procedures facing the Palestinian traders contribute significantly to hampering the trade, with costs and unreliable logistics, which reduce their ability to compete in the international market. The security concerns of the Israeli government have an impact on the movement and access within the West Bank and Gaza Strip and at the international borders of the Palestinian territory.

The dissertation assesses different options for the future Palestinian trade regime, while acknowledging that the restrictions on movements of goods and people have had a negative impact on the Palestinian trade performance. In addition, it discusses what the Palestinian Authority should do to achieve a reliable and low transaction cost for the traders. The study suggests different alternatives for the Palestinian Authority to benefit from a reliable and low cost supply chain.

This study is trying to answer the following questions: How to deal with these obstacles? What are the problems that do exist in relation to these obstacles? How to minimise these obstacles? What can be the other alternatives for the Palestinian Authority?

1.3 Scope of the study

The scope of the study is limited to analysing the problem of the Palestinian trade disadvantages, and determining the alternative routes for trade facilitation in the Palestinian territories.

Well established and developed border crossing logistics enhance cost effective, secure and efficient services. The main idea and overall goal of this dissertation is to realize the border crossing regime and what can be done toward creating efficient and secure transit services at the border crossings.

1.4 Methodology

Firstly, a literature review were conducted regarding the development of LLDCs using different Web sites; publications by UNCTAD, the World Bank and the World Trade Organization; other reports and documents related to trade facilitation in landlocked countries and the Palestinian territories.

The design of this study is descriptive and analytical to find the relationship between economic development and trade facilitation in the Palestinian territories. The study was discussed trade barriers in LLDCs and demonstrated the relationship between being LLDCs and the economic activity of exporting and importing. And from the literature review of landlocked countries and Palestinian territories the dissertation presented alternatives approaches to enhance trade facilitation in the Palestinian territories.

Trade facilitation is composed of:

- Transport and communication infrastructure
- National and institutional policies and capacity
- Security
- Operational issues

Figure 1 show these four components combined to determine the level required to gain efficient trade facilitation; the sum of these factors will determine the competitiveness of the trade in the Palestinian territories. The study was focused on these four factors to show the necessity to facilitating trade and controlling efficient and effective flow of cargo, people and information for the purpose of enhancing trade competitiveness in order to gain national welfare.

In order to formulate adequate trade facilitation, as a starting point the study assessed the current situation.

The study showed the effect of these factors on the Palestinian trade. The forecast of the future traffic that would go through the Palestinian territories which would require adequate development polices in each one of the four factors to enhance trade facilitation.

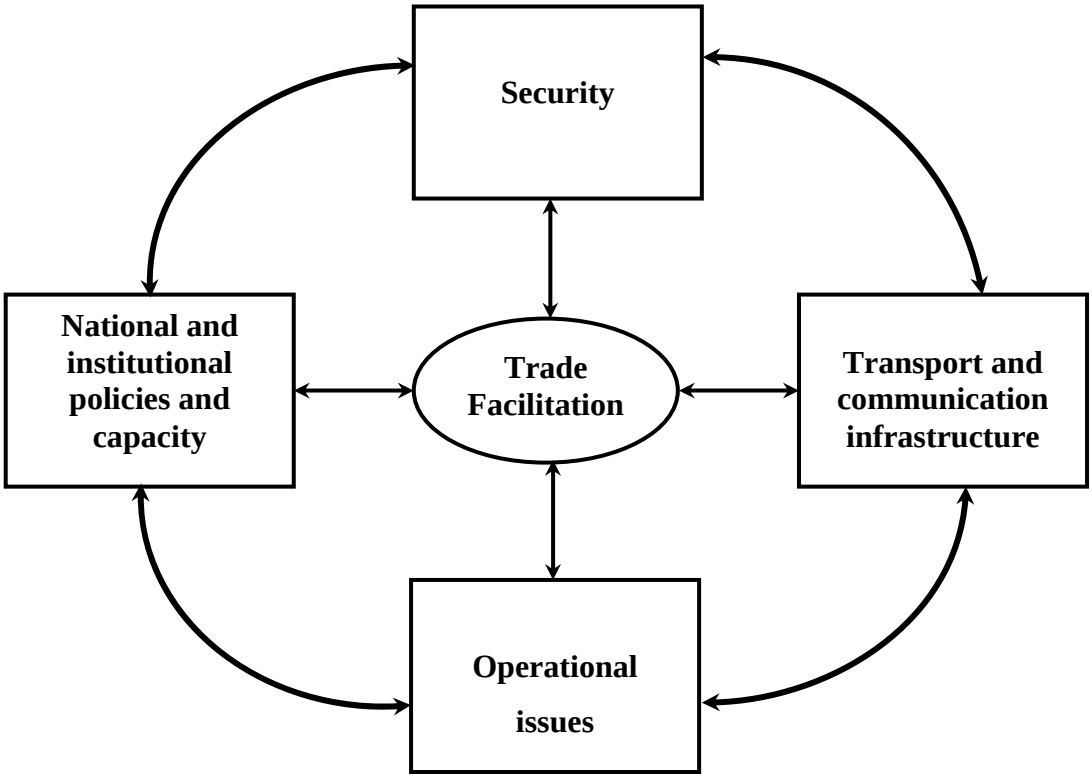

Figure 1: Dimensions of trade facilitation in the Palestinian territories

Source: The Author

1.5 Organization of the study

Chapter two defines the problem of landlocked countries and the obstacles that can raise the transaction and transportation costs. The chapter highlights the main barriers causing slow economic growth in LLDCs

Chapter three of the study highlights the border crossing regime and the main problems of the movement and access in the Palestinian territory and assesses the border activities in the Gaza Strip and West Bank. The end of the chapter clarifies how these problems affect the economy and trade. In addition, it highlights the problems with the Jordan Valley and Paris Protocol.

Chapter four in the study forecasts the future Palestinian imports and exports to show that with the current border crossing regime, the borders are the main bottleneck in accommodating this growth in the traffic. The chapter identifies four necessary elements that the border crossing regime should possess.

Chapter five suggests interim solutions that enhance trade facilitation for the Palestinians, by facilitating the movement and access. These solutions include: border crossing approach, rerouting the trade with other neighbouring countries, development of the Rafah corridor, establishment of Gaza seaport and the establishment of the territorial link.

Chapter six suggests a multimodal transport system as a solution for the future independent Palestinian state. The chapter highlights different trading routes with different modes of transport and compares the total logistic cost of each route, with emphasis on the importance of ICTs.

Chapter seven goes through the conclusions and recommendations for the Palestinian Authority to implement the previous approaches and facilitate the flow of goods.

CHAPTER TWO

2 TRADE FACILITATION AND THE CHALLENGES IN LLDCS

2.1 Introduction

Trade facilitation has become one of the main challenges in the international trade agenda and this due to the costs that arise from the delays at borders, which exceed the costs of applied tariffs. Trading allows countries to participate in the world economy. Thus, it follows that the cost of trade, especially the transport cost, is a very important indicator for measuring the ability of a country to participate in the world economy. Trade facilitation brings benefits to stakeholders including governments, enterprises and consumers, by enhancing the efficiency of the supply chains, which increases the competitiveness (OECD, 2006). There is a no specific definition for trade facilitation in the public domain; but in a specific sense trade facilitation can be addressed as the logistic movement of goods through the supply chain, or more precisely moving documentation that is related with cross border trade. It is the main concern of many international organizations, with different or similar definitions such as :(Wilson, Mann, & Otsuki, March, 2003, pp. 4 and 23)

WTO and UNCTAD: “simplification and harmonization of international trade procedures, including activities, practices, and formalities involved in collecting, presenting, communicating, and processing data required for the movement of goods in international trade.”

OECD: “Simplification and standardization of procedures and associated information flows required to move goods internationally from seller to buyer and to *pass payments* in the other direction”.

UN/ECE:

A *comprehensive and integrated approach* to reducing the complexity and cost of the trade transactions process, and ensuring that all these activities can take place in

an efficient, *transparent, and predictable manner*, based on internationally accepted norms, standards, and best practices.

APEC:

> Trade facilitation generally refers to the simplification, harmonization, *use of new technologies,* and other measures to address procedural and administrative impediments to trade. The use of technologies and techniques which will help members to *build up expertise,* reduce costs and lead to better movement of goods and services.

International transportation services have improved very fast over the past decades and with the progress in standardization and trade liberalization, and cheaper transport services, these become one of the main elements that contribute to the economic globalization and integration of production processes globally (Sanchez et al., 2003). Despite improvements in transport services, the landlocked developing countries still face the challenge of being a part of the world markets for many reasons.

Firstly, landlocked countries are faced with a unique situation that resists the response to trade facilitations such as the geographical obstacles, the level of infrastructure in the transit country and the landlocked country, the human resources and their capability to run the transit operation smoothly and the effect of information and communication technology in facilitating the trade for the landlocked developing countries (LLDCs) (Faye, Mcarthur, Sachs, & Snow, March, 2004).

Secondly, in some countries the port industry is the main contributor to the gross domestic product (GDP), which is not the case with landlocked countries. As a result, the LLDCs lag behind the costal countries in overall development and international trade. LLDCs are faced with slow economic growth just by being landlocked countries. For example, a study was done in 1995 which stated that the import share in the GDP of landlocked countries was on average 11 percent, whereas at the same

time the share in costal states was 28 percent. To overcome this problem, the LLDCs have to work more in trade facilitation to place the LLDCs in a competitive position in the world market (Limão & Venables, 2001).

More specifically, the main barriers causing the slow economic growth in LLDCs are the border crossings, customs and security inspections, among many other obstacles.

LLDCs, i.e. countries without direct access to the sea and thus also to maritime trade, face very specific challenges. Compared with their coastal neighbouring countries, they are forced to transit their merchandise, exports and imports, through other countries. The disadvantage of LLDCs is being dependent on the neighbouring countries for their external trade and, moreover, on cross-border political relations, peace and stability in the country and many other factors (UNCTAD, 2005[a]). LLDCs have a lower economic growth, less investment and lower share in trade globalization and production as compared to other developing countries and the main reason for this in the lack of development and inadequate trade facilitation and transport connectivity (UNCTAD, 2006). Landlocked developing countries are facing many other obstacles, which reduce their capabilities to be in a competitive position to trade internationally, such as low per capita GDP, low income level, low level of economic development and limited domestic savings capacity. Due to these factors they have high transport costs and high prices compared with international markets (UNCTAD, 2005[a]). In addition to these, the high transaction costs weigh heavily on the development in the exports and limit their competitiveness in trade. The main obstacles for LLDCs to be a part of the competitive global trading system are the high costs related to transportation and transaction costs (UNCTAD, 2005[a]).

2.2 Challenges facing LLDCs

The first challenge is the high total transport cost which can be divided into three categories: transportation within the country's borders, transportation through transit countries, and sea transportation to the final destination. In addition, the transportation through transit countries introduces uncertainty about future value of

the transported goods. Different factors that act individually or in combination affect the total cost. These factors are: (UNCTAD, 2005[a])

1. Undeveloped infrastructure facilities at the border crossings and the way to seaports either in LLDCs country or in transit country, which burden the transit cost.
2. More charges related to the cargo movement such as cargo handling, insurance, banking.
3. Customs act as cost barriers and so do the national holidays and closure of border crossings in the transit country.
4. Logistic costs due to the delays, the need to achieve contacts and corruption.
5. High inventory cost due to the unpredictability of trade flows

Secondly, the factors which influence the transport costs of LLDCs are the following: (UNCTAD, 2005[a])

1. Overland (rail/road) transport costs are higher than sea transport. An extra 1,000 km by sea may add $190 to transport costs, while the same increase in land distance may add $1,380.
2. Using of multimodal transport chains to export from LLDCs involves costly modes of transport.
3. The quality of port administration and/or port infrastructure also influences the cost of transport

2.3 Transport costs and LLDCs trade

Distance is a main determinant in road transport costs beside the massive investment in road infrastructure, which is not the case with water transport, so the distance is a major factor for countries trading by land or countries located far away from seaports compared to economic centres located near their seaports (UNCTAD, 2006).

Most LLDCs import mainly manufactured goods at rates higher than exports, which leaves a trade deficit. At the same time the cost for import will be higher because the freight also includes the transport of empty trucks or containers back to their place of origin. Due to the trade imbalance, the transport costs for exports are often lower

than imports because the trucking company will be satisfied by having cargo onboard rather than driving back empty, so in this case it is not so much the high transport costs for exports that can determine the competitiveness of the LLDCs. Rather it is the delay and uncertainty of delivery times. The delay can be anticipated at any stage of the transit chain but the most influencing one can be the delay happening in the main interface point between the land transport and the maritime transport and at the national borders (UNCTAD, 2003), which result in high transport costs and long delivery times leading to high production costs for the goods that are exported. Moreover, the low trade volume from LLDCs leads to high transport costs due to the theory of economy of scale (UNCTAD, 2006).

Border crossings are the most critical points that need action to be taken.

1. To develop the infrastructure and shared facilities as stated in the International Convention on the Harmonization of Frontier Control of Goods (1982)
2. Coordination between all border control services such as customs, police and private sector agencies. This can be done through adequate information system management (UNCTAD, 2003).

Moreover, development of adequate national transport networks and efficient transit transport systems are critical. Due to the lack of adequate transport connectivity and high transport costs in landlocked countries, the shape of trade patterns are at high risk of isolation from international trade and transport networks. Therefore, adequate transport connectivity is a key factor that has to be of great concern for LLDCs (UNCTAD, 2006).

2.4 Dependence on other countries' transit routes to access market

Landlocked countries are not only faced with transit costs and other costs, but also face the challenges resulting from the complete dependency on the transit country to access the global market. This dependence can be classified into two categories.

Dependence on transit countries' infrastructure

The total dependency of the landlocked countries on the transit country's infrastructure, to transfer their goods can lead to two options: either good infrastructure, which will enhance the trade, or a weak infrastructure environment, which will result in limiting the ability of the landlocked country to compete in the global market due to the limited opportunities (Faye et al., March, 2004).

Dependence on political relations

A landlocked country depends on its political relationship with the transit countries. If a conflict exists between the transit country and the landlocked country, then the transit country can block the borders or adopt a rigged regulation that can hamper the trade (Faye et al., March, 2004).

A number of international conventions provide a general legal framework for the freedom and the right of the landlocked countries to access markets through transit countries. As stated in the United Nations Convention on the Law of the Sea (UNCLOS) Article 125(1):

> Land-locked States shall have the right of access to and from the sea for the purpose of exercising the rights provided for in this Convention including those relating to the freedom of the high seas and the common heritage of mankind. To this end, land-locked States shall enjoy freedom of transit through the territory of transit States by all means of transport.

But this access must be agreed upon between both countries as per Article 125(2) and (3) and this right can be determined by the relation between them.

Moreover, the convention states in article127(1) and 130(1) that "the traffic in transit shall not be subjected to any taxes or duties" and "Transit States shall take all appropriate measures to avoid delays or other difficulties of a technical nature in traffic in transit" (United Nations, 1982).

2.5 Trade facilitation and development

Trade facilitation is the cornerstone of international trade mainly due to the costs that trade bears through the different stages of the supply chain, especially at the border crossings (OECD, 2006). This cost can be high, especially with the massive growth of the trade volume resulting in increasing the pressure on the international trade infrastructure and the customs procedures. As a result, there is an increase in the demand to facilitate the trade through expanding the transportation network, with more efficient use of information systems and more efficient customs clearance at the international borders. The development of logistic systems leads to traders holding lower levels of stock with the use of an integrated global supply chain.

In addition, the introduction of the just on time approach and the use of Electronic Data Interchange (EDI) have increased the pressure on the supply chain, which has resulted in reducing the competitiveness of landlocked developing countries (LLDCs) with a great degree of risk every time the goods cross international borders. Moreover, the exporting countries have to go through new security measures that make development more difficult to achieve (OECD, 2006).

The trade of landlocked countries depends mainly on the transit countries to access global markets through the ports in neighbouring countries, thus their competitiveness in the international market does not only depend on modernization and standardization at home but also on the transit trade and transport procedures in the transit countries. Therefore, investment is needed from both transit countries and landlocked countries, with specific arrangements to gain benefit from the cooperation between them. The increased volume of trade permits economies of scale and cost savings, which will increase the trade flows and enhance economic growth (UNCTAD, 2006).

2.6 Benefits of trade facilitation

Trade facilitation acts as a tool to enhance the efficiency of the supply chain and, as a result, improves competitiveness, which helps attracting foreign direct investments, enhances revenue collection and combats corruption (OECD, 2006).

These result in using the resources more efficiently and effectively, which will have positive consequences on the country's development (OECD, 2006). The trade suffers from both direct costs, such as costs related to information and document procedures, and indirect costs, such as cost of delays, missed opportunities, and lack of reliability. An estimation done by OECD suggests that transaction costs may range from 2% to 15% of the value of the traded goods, and any reduction in these costs, which can be done through efficient customs procedures and formalities, will have a great positive impact on the international trade and in turn affect the economic growth. The suggestion estimated that a reduction of 1% would have an impact on the global welfare of 40 billion USD with non-OECD countries having two thirds of this gain.

The trade taxes have an important share of the overall government revenue. In this regard the main goal behind trade facilitation is to increase the revenue. Beside all of these, trade facilitation enhances the governance in partner countries through compliance with best practices and reduces corruption and smuggling (OECD, 2006). Trade facilitation, such as transit transport systems and joint border operations, help to enhance trade with neighbouring countries and help to promote the industries that are sensitive to time and distance, particularly high value goods that may be traded by air transport. Most trade facilitation will have an efficient result if there is improvement in the general standardization, harmonization and simplification of many import and export procedures, and benefit the transit trade procedures with regional agreements and simplified cargo clearance systems (UNCTAD, 2006).

Achieving high trade and transport facilitation objectives mainly depends on the ability of the countries to know their priorities, which is very essential in the negotiation of trade agreements, whether they are bilateral, regional or multilateral. Priority setting should be based on the analysis of countries' trade flows and

structure, mode of transportation used, projection for trade growth, and their geographical position (UNCTAD, 2006). The benefit from trade facilitation can be very important for developing countries and in particular for small and medium size enterprises (SMEs) in the sense that demolishing of trade barriers and inefficiencies can be more important than just reducing the tariffs. Trade facilitation results in direct benefits to both Governments and business; Governments benefit in terms of revenue collection, better security and increased economic efficiency, while traders gain from the fast delivery of goods and reduced transportation and transaction costs. In this sense trade facilitation enhances the capacity of SMEs to participate in international trade.

Trade and transport facilitation must not be just narrowed to border crossing trade operations, but must be taken as a development tool to achieve efficient trade operations, develop human capacities, legal framework, infrastructure and the use of information technology systems to achieve the goal of trade facilitation.

The use of trade facilitation as a tool of development will help to introduce high transparency in customs procedures with the use of information and communication technology, which may contribute to overcome the problem of corruption (UNCTAD, 2006). Trade facilitation can be a tool for Governments and the trading community to improve international trade by simplification of formalities and procedures, standardization of physical facilities and means and the harmonization of applicable laws and regulations (UNCTAD, 2006).

Furthermore, trade facilitation cannot be treated separately from a country's overall development. Facilitation measures and development measures are moving side by side, such as per-capita income and the correlation between the average clearance times, number of required signatures and number of documents, which shows that there is a positive relation between these and the country's income (see Table 1).

Table 1: Correlation between trade facilitation indicators and income level

Income level of countries	Average clearance time in days	Average number of documents required	Average number of signatures required
Rich	16	7	4
Upper middle	28	10	9
Lower middle	40	12	16
Poor	61	13	28

Source: (UNCTAD, 2005[b])

2.7 Border and transportation security

Border and transportation security is one of the major elements in enhancing trade facilitation. Border security is demanding regulation to allow the flow of goods across the borders, but in a way so that the dangerous and unwanted goods are denied to cross. This requires a comprehensive border management system that balances the security needs and the trade flows. The attack on 9/11 has changed the face of the world, putting more pressure and more emphasis on the security not only in aviation, but in all modes of transport, which has hampered the trade facilitation developments. The focus has turned onto container cargo. Since 90% of global trade by value is transported in containers, new equipment has been introduced to achieve a high level of security, resulting in increasing the cost on the global supply chain. At the same time the prospect of enhancing trade through technology, customs inspections and other advanced methods should be viewed as investments in enhancing great trade chain security, which will result in reducing the threat and adding greater value of transparency. The use of innovative technologies like gamma ray detection facilities will reduce the need for physical inspections (Roy & Bagai, 2005).

For high level of security and efficient trade, security and supply chain management have to go hand in hand and a fair balance should exist. Thus partnerships at different stages of the supply chain are needed to make the supply chain both

efficient and secure, also by involving all agencies and organizations in the transport to collaborate with the governments.

In this regard, ships, truck, and railroads must begin to build a security infrastructure, as the transportation of cargo is critical to the international economy and the facilitation has to be up to the standards but there must be no compromise with security. This can be achieved through new technology and new regulations that place both in the top priority. As an example development in technology starts to provide the trucking companies with innovations in security and communications, including satellite tracking, locks and seals, alarms and engine controls such as engine kill switches which can be activated locally or remotely, and transponders and transmitters that can provide the location of the truck via satellite.

CHAPTER THREE

3 IMPACT OF BORDER CROSSINGS ON THE PALESTINIAN ECONOMY

The author's main interest in landlocked countries has been demonstrated from the situation going on in Palestine as the economy is in decline. Although the state of Palestine is a costal state, it is considered to be a landlocked country where practically all goods have to be transported through Israeli ports and cross the borders by land transportation to either the Gaza Strip or the West Bank. Therefore, Palestine faces the same trade related issues as other traditional LLDCs do.

3.1 Geographic location, infrastructure

The Palestinian territories consist of two geographically separated regions, the West Bank and the Gaza Strip, with a total population of 3.6 million, distributed as 1.3 million in the Gaza Strip and 2.3 million in the West Bank. The Palestinian territory lies on the western edge of the Asian continent and the eastern side of the Mediterranean Sea. It is small in area, covering 6225 km^2, of which 365 km^2 in the Gaza Strip borders Israel to the north and east, the Egyptian Sinai Peninsula to the south, and the Mediterranean Sea to the west and 5860 km2 are in the West Bank located between Israel to the West and Jordan to the East to constitute about 23 per cent of the area of the pre-1948 British Mandate. The road network forms the backbone of the transportation system in the Palestinian territories. The current paved road network in the Palestinian territories comprises of 2869 km, of which 2248 are in the West Bank and 621 km in the Gaza Strip. The main roads form about 21% of the total road network, the regional roads form about 30%, while local roads form 49%. The road infrastructure in the West Bank and Gaza Strip can be characterized as generally suffering from neglect and the impacts of the Israeli

occupation since 1967. When the Palestinian National Authority (PNA) was established in 1994, the percentage of roads in good condition formed only 15% of the total, while the percentage of poor roads reached 56%, and the remaining 29% were in fair condition (Abu Eisheh & AlSahili, 2006).

However, despite the long seacoast of the Gaza strip, international trades are completely depending on the neighbouring countries, especially Israel. In addition, Israel controls the main borders, and without access to the sea makes the Palestinian territories effectively landlocked, and totally dependent on the political and security developments, which prevent the participation of the Palestinian enterprises from increasing their competitiveness in the international trade (United Nations, 2004).

3.2 Assessment of Gaza Strip commercial terminals

There are six crossing points in the Gaza strip used as trade terminals. These terminals are used for handling the imported and exported goods. Four of these terminals are fully controlled by the Israeli authorities, while the Rafah terminal is partially controlled by Palestinian Authorities. The last one is the new terminal, which was classified in the Agreement on Movement and Access 2005 (AMA). The terminal will be used to import goods from Egypt and is under full control of Israel.

3.2.1 AlMontar/ Karni Terminal

The terminal is considered as the major commercial terminal in the Gaza strip, located at the east of the Gaza, connecting it to the West Bank, Israel, and the rest of the world. As stated in AMA 2005, the terminal suffers from inefficiency and insecurity, where as agreed in the agreement the number of trucks that should be processed is 150 daily and by the end of

Figure 2: Crossing points at Gaza Strip

2006 should reach 400 trucks daily, but at the end of 2007 the actual number of trucks was only 70 daily. Out of 313 available working days in 2007 the terminal operated only 133 days. The total of imported truckloads to the Gaza strip was 60,270 and a total of 5,746 truckloads were exported. Between 2000 and 2004 the terminal had a relatively constant import of on average 79,000 truckloads, in 2005 the average increased by 30%, to drop again in 2006 and 2007 by 42%. The export level between 2000 and 2005 fluctuated with an average of 10,000 truckloads. In 2006 this trend declined by 50% of the export average as compared with the previous trend and in 2007 was 45% lower than the average as shown in the Figures 3 and 4.

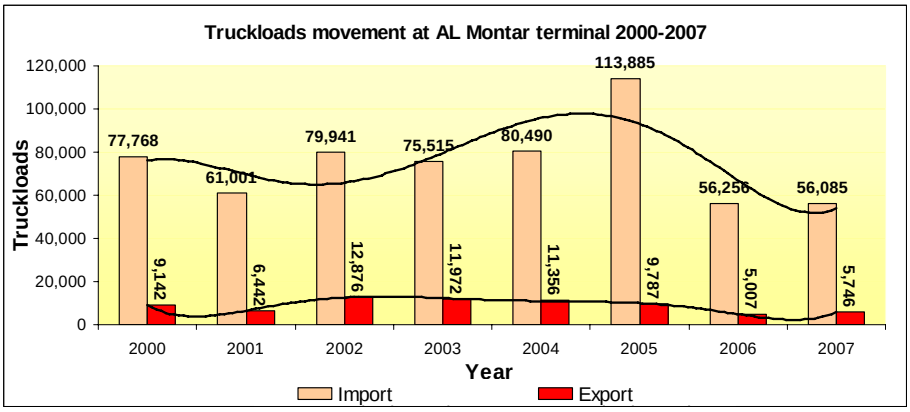

Figure 3: Truckloads movement at AL Montar terminal

Source: Author, Paltrade database http://mail.paltrade.org/hanna/crossing/get_monthly.php

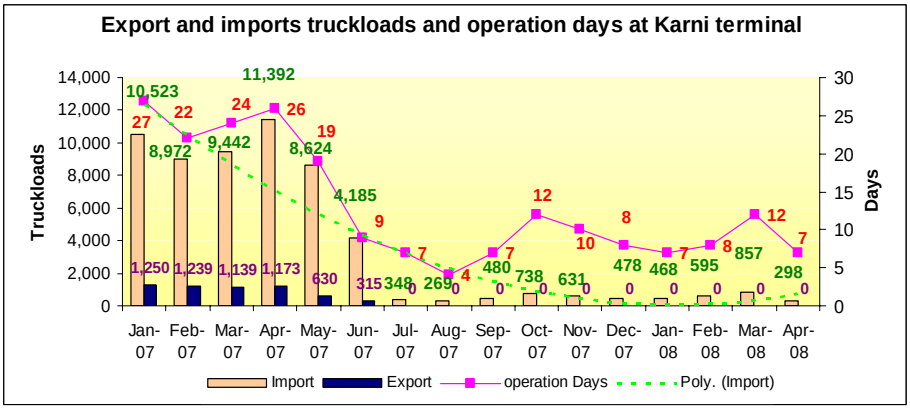

Figure 4: Export and import truckloads and operation days at Karni terminal

Source: Author, Paltrade database http://mail.paltrade.org/hanna/crossing/get_monthly.php

The number of operation days for July 2007 to April 2008 showed a decline with an average of 8 working days per month. In addition to that, the number of imported truckloads for the same period averaged 500 per month as compared to 8800 truckloads monthly for the period from Jan 2007 to Jun 2007. Furthermore, the export has been stopped since July 2007 until now, but even before that the number of truckloads was unsatisfactory. An assessment of the exports, carried out by the United Nations after one year of implementing the AMA 2005, for the Karni terminal is illustrated in Figure 5.

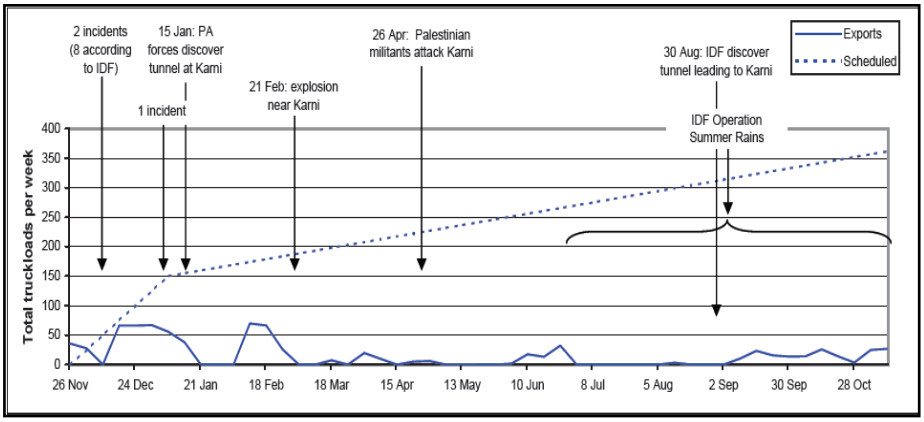

Figure 5: Export through Karni Crossing 2006

Source: (OCHAOPT, NOV, 2006)

3.2.2 Nahal Oz Entry Point

This terminal is located as shown in Figure 2 east of the Gaza strip and is mainly utilized for petroleum products imported only from Israel. The terminal consists of storage tanks and gas tanks linked directly with pipelines to the Israeli side. The terminal, in November 2007, faced a decline in the imported fuel by 25% and in December by 14% as shown in Figure 6. Where the average fuel imported from January 2007 to December 2007 was 17.6 million litres per month, and from January 2008 till April 2008 it declined to an average of 11.8 million litres. There was an increase in the imported gas for the same period and this can be explained by the use of gas as fuel for cars in the Gaza strip as a substitute for the shortage in fuel. This

decrease in the import, similarly to the case with the Karni terminal, reflects the closure policy Israel imposed on the Palestinian Authority.

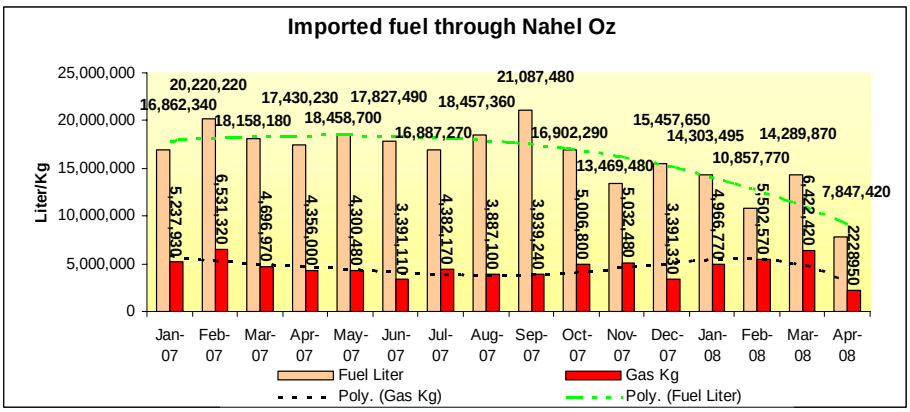

Figure 6: Imported fuel through Nahal Oz

Source: Author, Paltrade database http://mail.paltrade.org/hanna/crossing/get_monthly.php

3.2.3 Sufa Terminal

The terminal, located in the south of the Gaza Strip, has been utilized for the imports of construction materials. The terminal has been used after the closure policy, which has been implemented on the Palestinian Authorities, as an alternative to the Karni terminal for importing goods that are considered as humanitarian to avoid a crisis in the Gaza Strip. Figure 7 shows the terminal trend in 2007 for the number of truckloads and the operational days in the terminal, where in June 2007 the number of truckloads dropped to 159 imported truckloads with 8 working days during the month. Moreover, the terminal is still subjected to the closure policy and the trend shows a decline since August 2007 until January 2008 and then starts relatively increasing from February 2008. This is a reflection of the security concerns of the Israeli Government and the poor political relationship between the Palestinian Authority and the Israeli government.

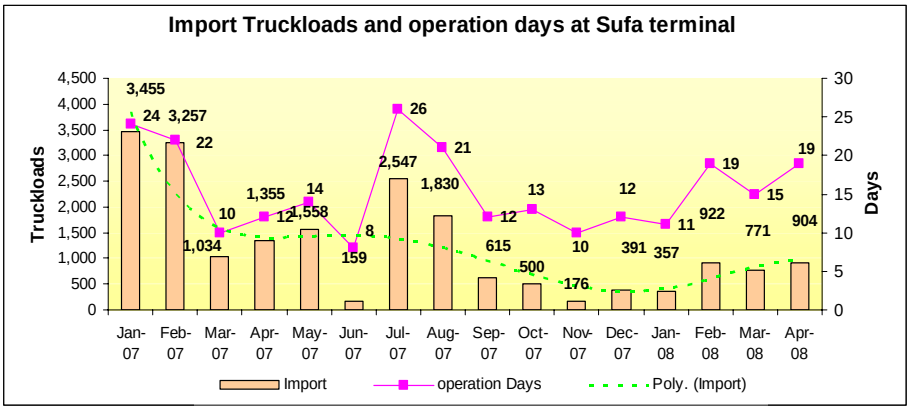

Figure 7: Import truckloads and operation days at Sufa terminal

Source: Author, Paltrade database http://mail.paltrade.org/hanna/crossing/get_monthly.php

3.2.4 Karem Abu Salem/Kerem Shalom Crossing

The terminal is new as has been agreed in AMA, and is located 3.6Km away from the Rafah terminal, and used temporarily for importing goods. The terminal has been used as an alternative to the Karni terminal to import goods that are considered as humanitarian. The trend in June was 132 truckloads with 7 working days/ month and increased to 1065 in December 2007 with 23 working days/ month.

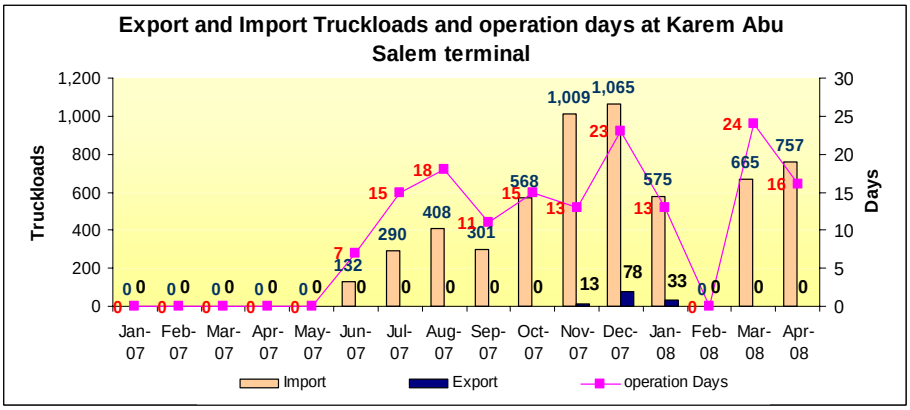

Figure 8: Export and import truckloads and operation days at Karem Abu Salam

Source: Author, Paltrade database http://mail.paltrade.org/hanna/crossing/get_monthly.php

3.2.5 Beit Hanoun/ Erez Terminal

The terminal is located in the north of the Gaza strip connecting it with Israel and the West Bank. This terminal is mainly used by civilians as labour, medical cases, diplomats, businessmen and international organization staff, with a permit from the Israeli authorities. Moreover, the terminal is used to import cars (PALTRADE, 2008).

3.2.6 Rafah Border Terminal

The terminal is located in the South of the Gaza strip and is mainly utilized for passenger crossing from and to Egypt and was used as a cargo crossing point until 2005. The control of the border in 2005 was transferred to the Palestinian Authority and under the supervision of the European community, after Israel's disengagement from the Gaza Strip (PALTRADE, 2008). An assessment carried out by the United Nations after one year from implementing the AMA 2005 for the Rafah terminal is illustrated in Figure 9. At the moment the terminal is effectively totally closed by the government of Israel, as a third party in the border management since April 2007, which is imposing a restriction on the movement of persons and goods through the terminal into and out of the Gaza strip affecting the social and commercial activities of the Palestinian Authority.

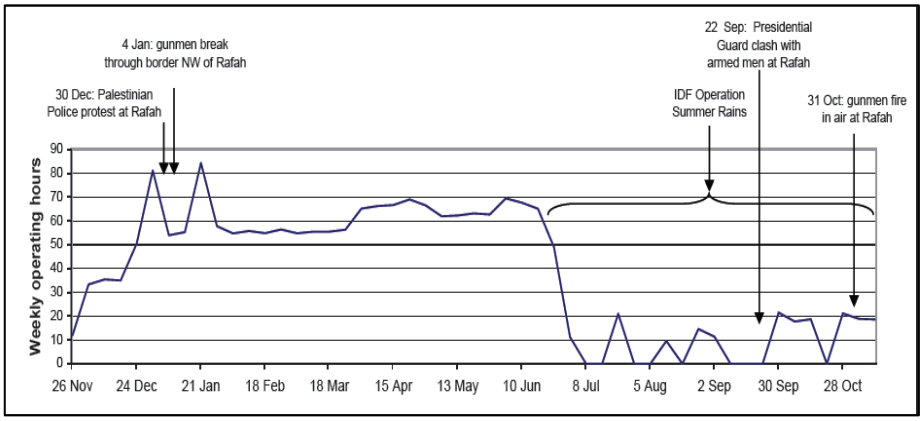

Figure 9: Operation of Rafah Crossing 2006

Source: (OCHAOPT, NOV, 2006)

3.3 Assessment of the West Bank commercial terminals

3.3.1 Tarqumia Terminal

The terminal is located northwest of Hebron in the south of the West Bank 150 meters west of the Tarqumia checkpoint serving the cities of Hebron and southern cities of the West Bank. It is used for import and export from/to Israel. There is no presence of Palestinians in the terminal, which was opened by the Israeli government in October 2007 (PALTRADE, April, 2008). The border has been opened according to the Sharm al-Sheikh convention. [1] In the September 1999 Sharm al-Sheikh Memorandum, the parties pledged

Figure 10: West Bank crossing terminals

to facilitate the movement and transfer of goods between the West Bank, Gaza and Israel. In practice, like other checkpoints throughout the occupied Palestinian territories, those who are hoping to cross will be subjected to body searches, document checks and many other difficulties. The border will be used for transferring goods, workers and merchants between the West Bank, Gaza Strip and Israel (Wardeh, November, 2007). Figure 11 shows the movement of trucks through

[1] For more information about the convention please refer to : http://news.bbc.co.uk/2/hi/in_depth/middle_east/2001/israel_and_the_palestinians/key_documents/1632064.stm

the terminal with the number of operation days, with a trend upward for the imported goods from 1403 truckloads in January to 2873 truckloads in April 2008 and a slight increasing trend for exported goods as well.

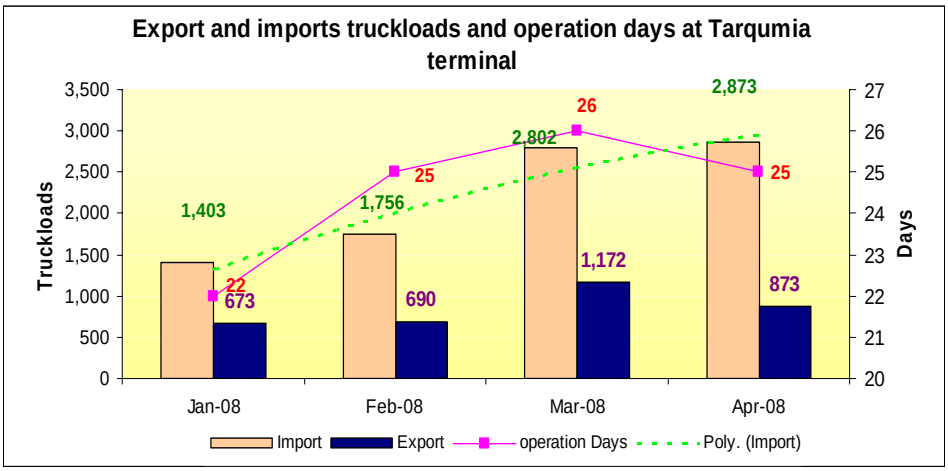

Figure 11: Export and import truckloads and operation days at Tarqumia terminal

Source: Author, Paltrade database http://mail.paltrade.org/hanna/crossing/get_monthly.php

3.3.2 Betunia Terminal

The terminal located south of Ramallah, was established in 2002 and is used for import and export with Israel, serving the cities of Ramallah and northern cities of Jerusalem. The terminal is used for manufactured products, agricultural crops, cement, sand and chemical products. The terminal does not have a scanner so the inspection is done manually. The manual checks cause delays and damages to the goods. The number of import truckloads in January 2008 was 840 and increased to 1359 in April 2008 showing an upward trend as shown in Figure 12. Similarly, the number of export truckloads increased from 580 in January 2008 to 1,087 in April 2008.

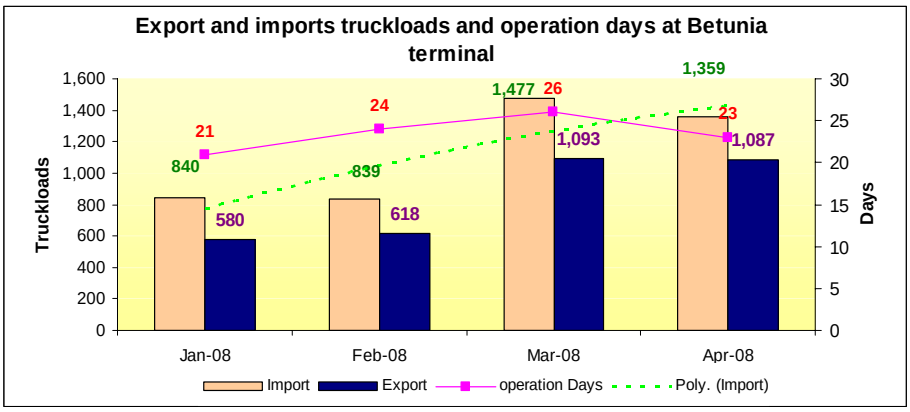

Figure 12: Export and import truckloads and operation days at Betunia terminal

Source: Author, Paltrade database http://mail.paltrade.org/hanna/crossing/get_monthly.php

3.3.3 Al Jalameh Terminal

Al Jalameh is located north of Jenin. The terminal serves the Jenin and Nablus cities, and it is used for both imports and exports between the West Bank and Israel. There is no official Palestinian presence at the terminal which is fully under Israeli control (PALTRADE, April, 2008). The trucks go through scanning machines where five trucks are allowed to enter; in addition to this 50 to 60 percent of the trucks go through manual inspection. No official statistics are available about the trade movement.

3.3.4 Taybeh/ Sha'ar Ephraim Terminal

The terminal is located south of Tulkarm and was officially opened by the Israelis at the end of 2005. The terminal serves the cities of Nablus, Tulkarm, Qalqelia and part of Jenin. It is used for both imports and exports between the West Bank and Israel. The terminal is divided into two main sections, one for movement of goods and the other for the movement of people, particularly labourers. The trend of the terminal in Figure 13 during the months from January to April 2008 shows an increase in the number of truckloads especially in March with 1441 import and 1180 export

truckloads, which is due to the increase in the number of operation days to 25 days (PALTRADE, April, 2008).

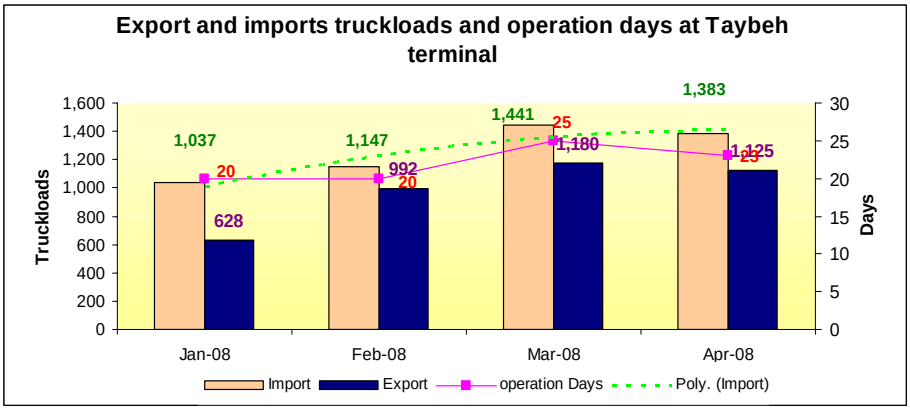

Figure 13: Export and import truckloads and operation days at Taybeh terminal

Source: Author, Paltrade database http://mail.paltrade.org/hanna/crossing/get_monthly.php

3.4 Israeli Palestinian crossing regime

To enhance economic growth for both the Palestinian and Israeli economies, the normalization and facilitation of the process to access the Israeli market would be a tool for recovery. Moreover, the facilitation to access the Arab market and global market will enhance economic recovery in the short term and act as engine for economic growth in the medium and long term by encouraging investment in trade activities (PALTRADE & Peres Centre for Peace, Feb, 2007). The border crossing regime is subjected to four categories of restrictions of the movement of the Palestinian exporters and importers

- Internal movement within the West Bank
- Movement between the West Bank and the Gaza strip
- Movement across the West Bank and Gaza to Israel and global markets
- Direct access to Arab markets and global markets via Egypt and Jordan

3.4.1 Internal movement within the West Bank

The closure policy in the West Bank which has been enforced by the Israeli government has imposed restrictions on the movement of 2.3 million Palestinians living in the West Bank. A number of checkpoints, physical obstacles and a permit system have divided the West Bank into three parts in addition to East Jerusalem, which isolated the Palestinians from the Palestinians, which has social as well as economical implications. In regard to trade routes, the route from the northern West Bank to Nablus and toward the south into the Jordan Valley is utilized for serving the north side, whereas goods travelling from Hebron and Bethlehem to the north go through longer roads in bad condition and crossing unpredictable checkpoints east of Jerusalem causing delay. The Jordan Valley is the most important Palestinian agricultural area today, but it is not allowed for Palestinians who are not from the area to enter unless they have a permit to work in the Valley. Moreover, the farmers face difficulties in moving their goods to the markets. These obstacles have contributed to raising the prices, causing unpredictability of trade and reducing the availability and quality of goods to the consumers (OCHAOPT, May, 2006). As has been reported by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), movement from one locality to another in the West Bank was controlled by a network of 607 checkpoints in April 2008 as compared to 566 in September 2007 as shown in Figure 14.

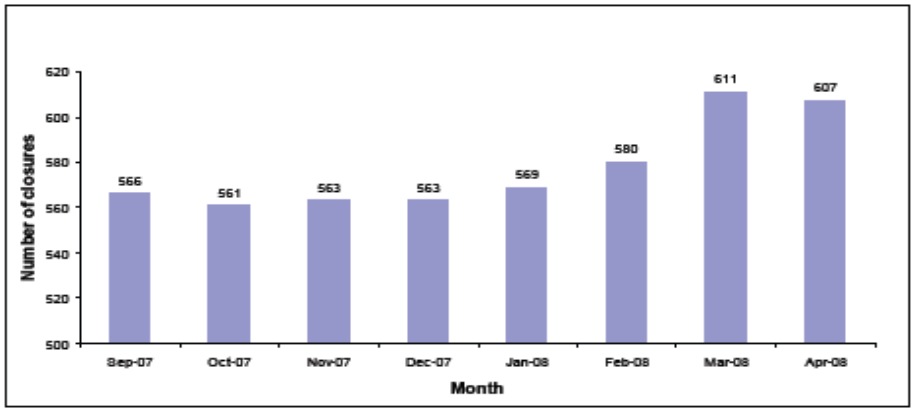

Figure 14: Number of closures within the West Bank

Source: (OCHAOPT, April, 2008)

3.4.2 Movement between the Gaza strip and West Bank

With limited movement of people due to the security regulations and the political situation, the economical and social activities between the West Bank and Gaza Strip have been affected. Moreover, the heavy security measures and the limitation on the movement of goods between the Gaza Strip and the West Bank, have contributed to increase the delay and transaction costs, especially for goods that are entering the Gaza Strip. In addition to this, using a back to back system, where commercial goods must be off-loaded and then re-loaded onto another truck, has made the Palestinian products non-competitive compared with goods imported from Israel. Moreover, the absence of a physical geographical link between the two parts of the country has contributed to fragmentation of the local consumption market. Under AMA 2005 the different parties agreed on truck convoys between the West Bank and the Gaza Strip to pass through Israel under a security force, but it has not been implemented until now (PALTRADE & Peres Centre for Peace, Feb, 2007, p.20).

3.4.3 Movement across the West Bank and Gaza to Israel and global market

At the West Bank borders Israel enforces a back to back system with strict security measures causing delay and uncertainty with damage to the goods. As a result, these measures act as a non-tariff barrier to trade, which makes it difficult for Palestinian traders to import and export without Israeli middlemen and paying Israeli drivers during waiting time at the border crossing (PALTRADE & Peres Centre for Peace, Feb, 2007). Palestinian goods moved to and through Israel are subjected to substantial costs since the truck operating costs are high due to the use of the back to back system and the delay and the time the drivers have to wait at the border crossings. The cost associated with exporting a 12 ton truck or one container through Israeli gateways exceeds the costs of truck transport as shown in Table 2 (USAID & World Bank, December, 2004).

Table 2: Average transport cost for trucking

Origin	Port	Transport	Border crossing	Total
West Bank	Ashdod	$322	$589	$911
	Haifa	$384	$588	$972
Gaza	Ashdod	$161	$589	$750
	Haifa	$345	$588	$933
	Port Said	$546	$438	$984

Source: (USAID & World Bank, December, 2004)

3.4.4 Access to the global market via third countries

The trade with Jordan through the Allenby terminal shown in Figure 10 is subjected to Israel's military and customs control. Moreover, the Israeli government is preventing the reconstruction of Gaza Airport after it had been completely destroyed in 2006, and also preventing the construction of the Gaza Seaport, which could provide an alternative to the Palestinian traders to access the global market. In addition, the Israeli customs union is preventing the handling of customs operations by the Palestinian Authorities. Furthermore, the Rafah corridor, which connects Egypt with the Palestinian side, has been agreed under AMA 2005 to be used as a trading terminal for the movement of goods between the Gaza strip and the global market. The Arab League agreement on the transit of goods approves a duty free transit of Palestinian goods through Egypt, but still, the corridor has not been used due to Israeli government security restrictions (PALTRADE & Peres Centre for Peace, Feb, 2007).

3.5 Impact on trade

The multiple obstacles and procedures facing the Palestinian traders contribute significantly to hampering the trade, with costs and unreliable logistics, which reduce their ability to compete in the international market. These factors can be summarised by the following: (USAID & World Bank, December, 2004)

1. *Delays and uncertainty at the border crossings*

This factor contributes to reducing the opportunities for exports of time sensitive goods, where the transit time is unpredictable.

2. *Lack of flexibility in the routing of goods*

The shipper will not be able to find any alternatives to have the freedom to seek out the least cost alternative or reduce the risk associated with border closure.

3. *The need to use Israeli trucks in Israel*

The forced demand from the Israeli government to use Israeli trucks has allowed the providers of the service to charge high prices, which as a result put the Palestinians at a competitive disadvantage.

4. *Multiple inspections per shipment*

With the slow transit time and unpredictability the Palestinian shipper is faced with excessive time penalties and, moreover, cargo damage, reducing the profit margins.

5. *Limitations on the personal travel of Palestinian exporters*

With this factor the Palestinian businessmen face limitations to travel and in consequence, need to use Israeli intermediaries, which limit the exporters' opportunities to interact with customers outside the region.

3.6 Palestinian economy and the impact of closure policy

The economic development of the Palestinian territory is facing numerous challenges. As the World Bank wrote in December 2004, "While prosperity is no guarantee of tranquillity, history teaches that the opposite is true: that destitution, political instability and violence are constant companions".

Jim Wolfensohn, president of the World Bank 1995-2005 continually emphasized the need to create Palestinian economic momentum and its connection with Israel's security. In 2005 he wrote to Prime Minister Sharon and President Mahmud Abbas; "I believe that we have an opportunity….to see a peaceful period where Palestinians can develop a better life based on tangible and visible prospects and where Israel can be more secure precisely because Palestinians….have greater freedom and hope"

(World Bank, December, 2005). The closure policy has affected the Palestinian economy in three main areas:

- Movement of goods and services
- Discouraging investment
- Worker's remittances

Due to Israeli security measures and the closure policy, which is taking place since 2000, Palestinians have suffered in different aspects such as travelling, movement of goods, and access to the international market. The isolation policy, which has been imposed on the Palestinian Authority, has squeezed the economic size. The Preliminary Palestinian Central Bureau of statistics (PCBS) shows that in 2006 the GNI declined by 15%, and estimated the decline in GDP to be 6.6%. Moreover, exports have declined by 3 percent while at the same time imports jumped by 20 per cent. This reflects the fact that the Palestinian market is isolated from the global markets, leaving a trade deficit of up to 73% of GDP (UNCTAD, 2007). The poverty level has reached 57.2 % of the households, which are below the national poverty line of 385$. In addition, the percentage of unemployed among the persons participating in the labour force in 2007 was 21.5% (PCBS, 2008). UNCTAD has reported a different and higher percentage of unemployed among the persons participating in the labour force; in 2006 it was 29.6%.

After eight years of economic siege every sector in the Palestinian Authority has been affected. The agriculture sector declined from 1996 to 2006 by 19 per cent, and the manufacturing sector declined by 7 per cent during the same period. Moreover, the isolation policy resulted in reducing the exports to Israel and the rest of the world, which reflects the policy of isolation from the world and Arab markets. In 2006 the imports counted as % of the GDP, accounted for 86% compared to 75% in 2005. This change means 500$ million were lost to the economy. The reduction in GDP and increase in imports means that the collapse of demand can be attributed to Israel's closure policy and the loss of local production to imports from Israel, which results in more than 55% of the Palestinian trade deficit; in other words, 50% of the

Palestinian GDP was needed to pay for the trade deficit with Israel (UNCTAD, 2007).

Table 3 : Palestinian economy (West Bank and Gaza Strip) Key indicators, selected years

Palestinian economy (West Bank and Gaza Strip) Key indicators, selected years								
Macroeconomic performance	**1995**	**1999**	**2002** rev.	**2003** rev.	**2004** rev.	**2005** prl.	**2006**	**2007**
Real GDP growth (%)	6.1	8.6	-3.8	8.5	6.3	4.9	-6.6	0.7
GDP (million $)	4 511	4 261	3 556	3 995	4 248	4 443	4 150	4135.8
GNI (million $)	3 699	4 932	3 835	4 251	4 884	5 119	4 522	4629.8
GNDI[a] (million $)	-	-	4 455	4 640	4 842	5 441	5 421	5967.3
GDP per capita ($)	1 380	1 478	1 146	1 221	1 264	1 258	1 134	1099.5
GNI per capita ($)	1 583	1 736	1 215	1 298	1 441	1 452	1 236	1230.8
Real GNI per capita growth (%)	7.9	4.1	-8.9	6.2	1.5	-1	-14.9	2.5
Domestic expenditure (% of GDP)	151.8	163.0	145.8	150.2	150.7	154.5	173	
Population and labour								
Population (million)	2.34	2.84	3.16	3.27	3.39	3.53	3.66	3.762
Unemployment (% of labour force)[b]	26.6	21.2	41.3	33.4	32.5	29.0	29.6	
Total employment (thousand)	417	588	477	564	578	633	666	
In public sector	51	103	115	119	131	145	164	
In Israel and settlements	50	127	49	55	50	63	64	
Fiscal balance (% of GDP)								
Government revenue	13.2	23.8	8.2	19.1	20.5	27.7	13.9	11.6
Current expenditure	15.3	22.5	27.6	31.4	32.0	43.6	31.9	25.86
Total expenditure	25.5	29.8	28.2	32.3	32.8	44.9	33	
Recurrent balance	-2.1	1.3	-19.4	-12.3	-11.5	15.9	18.0	
Overall balance	-12.3	-6.0	-20.0	-13.2	-12.3	17.2	19.1	
External trade								
Exports of goods and services (million $)	499	684	420	433	482	665	581	
Imports of goods and services (million $)	2 176	3 353	2 130	2 404	2 751	3 352	3 631	
Trade balance (% of GDP)	-52.0	-63.6	-47.2	-49.3	-53	-60.4	-73	
Trade balance with Israel (million $)	-1 388	-1 766	-1 149	-1 370	-1 623	-1 943	1 999	
Trade balance with Israel (% of GDP)	-43.0	-42.0	-31.8	-34.3	-37.9	-43.7	48.2	
Imports from Israel/PA private consumption (%)	56.5	54.5	43.6	43.4	44.6	51.5	43.5	
Total PA trade with Israel/total Israeli trade (%)[c]	3.7	3.7	2.1	2.2	2.2	2.4	3.1	
PA trade with Israel/total PA trade (%)[c]	78.8	68.0	69.0	69.1	70.3	70.1	66	

Source: (UNCTAD, 2007)

In addition, Israeli Authorities are responsible for collecting the taxes on behalf of the Palestinian Authorities as agreed in the Oslo agreement, but in 2006 Israel withheld more than 800$ million from the Palestinian tax revenues. As a result, Palestinian revenues declined by more than 50% compared to 2005, leaving a budget deficit of 791$ million, i.e. 19 per cent of GDP, leaving a negative impact on the economy (UNCTAD, 2007).

In this environment, private investors are unlikely to take the risk and invest. The uncertainty makes it less attractive for private investors to invest in the trade sector.

A study carried out by the United Nations–CEPAL to analyse the effect of uncertainty about the cost of transportation, leading to future cost rises which result in affecting the decision to invest, due to the fact that export costs will be high and also the imported raw materials which are needed to make the product. The study suggest that diversification of the trade through more than one transit country would offset the risk of uncertainty. The study has used a simple model to show this fact[2] (Carcamo Diaz, 2004).

In summary, the Palestinian Authority transit regime is surrounded with uncertainty in the transportation cost and with high transportation costs. In addition to that, the investors are risk aversive due to the existing political environment and the conflict between Israel and the Palestinian Authority. The post Oslo agreement investments can be noticed from Figure 15 as being at exceptionally high levels reflecting an optimistic and high expectation of the peace process. To offset this risk and the effect of the isolation policy, the Palestinian Authority required establishing intensive trading programs with neighbouring countries to increase their market dimension.

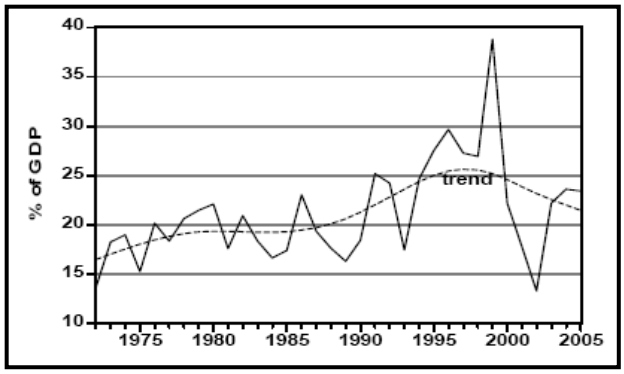

Figure 15: Private investment - Percentage of GDP (1975 – 2005)

Source: (UNCTAD, 2007)

[2] For More information about the study please refer to the web site http://www.eclac.cl/publicaciones/xml/8/14228/lcl2075i.pdf

3.7 Jordan Valley and Paris Protocol with the de facto trade regime

The Palestinian economy is subjected to many restrictions that impede growth. The restrictions on the movement in the Jordan Valley and the unimplemented Paris Protocol have an impact on the growth creating a *de facto* trade regime.

3.7.1 Jordan Valley coexistence problem

The Jordan Valley is a critical valued area that serves the West Bank economy. The area is an important source of agriculture production and known among the Palestinians as the 'bread basket'. Now the Jordan Valley is facing a political and security burden being implemented by the Israel government.

Since October 2005 it became necessary to obtain a permit to pass through the checkpoints into the area, which is causing delays and obstacles to movement. According to the OCHA, there were 21 physical obstacles in the Jordan Valley in April 2007.

Moreover, only the Palestinians with an address on their identification card indicating Jordan Valley are allowed to access the area. These security measures have as a result that the Palestinians who own land or property in the Jordan valley and live in some other place can no longer access their property without a permit. The permit even does not give the owner the right to stay overnight, which forces them to travel back and forth daily causing additional delay.

Moreover, all trade from the Jordan valley has to be processed through the Jalameh terminal into Israel and en route to the Gaza Strip using the back to back system (Arnon & Bamya, November, 2007).

3.7.2 Paris Protocol highlights

The aim of the Paris Protocol[3] is to be as a transitional tool which would guarantee that the new changes in the economic and regulatory relationship between the Palestinian Authority and the Israeli government would not harm the existing

[3] The Paris Protocol was adopted between the Palestinian Liberation Organization and the Israeli government as Protocol IV of the Oslo agreement.

relationship. Moreover, the protocol gave the Palestinians some sovereignty in managing their internal markets. This protocol was intended to provide a basis for strengthening the Palestinian economy and diversifying its external trade partners, such as neighbouring Arab countries, by ensuring the free movement of goods and people.

According to the Protocol the process of clearance of goods is handled by the Israeli customs on behalf of the Palestinian Authority and transferring the revenue to the Palestinian Authority, until the Palestinian customs have built their own capacity to be able to handle the customs operation.

3.7.3 Paris protocol limitations

Some of the limitations the protocol imposes on the Palestinian Authority are as follows:

- The Palestinian Authority cannot offer trade partners preferential or duty-free treatment to imports from most countries which Israel does not have such an arrangement with.
- The movement of goods between the Palestinian Authority and Israel is subjected to security measures, thereby restricting the movement of both Palestinian imports and exports through Israel.
- The Protocol limits the Palestinian Authority's ability to generate revenues since the possibility of the Palestinian Authority imposing a higher tariff rate (or indirect taxation) than Israel is constrained by the absence of provisions preventing the same goods from entering via Israel.
- The implementation of a customs union leads to adoption of trade arrangements which were in Israel's interest but not in the interest of the Palestinian economy.
- The protocol does not ensure the Palestinian Authority receiving customs revenues on goods that are not of Israeli origin, but imported from other countries to the West Bank and Gaza Strip via Israel. Such a clause cost the Palestinian Authority EUR 129.6 million and EUR 214.7 million in 1996 and

1997 respectively. As a result the Palestinian Authority has increased its monitoring efforts and has been able to gradually capture fiscal revenues from actual imports (Euro Med, December, 2004).

As has been discussed in the previous chapters, the limitations and the low operation level with the imposed closure policy on the main border crossings in the Gaza strip, at the Karni and the Rafah terminals have choked the economic activity.

Moreover, The Israeli settlements in the West Bank limit the movement within the West Bank and the Israeli markets. Furthermore, restrictions to access the Jordan Valley for most Palestinians has limited the Palestinian investment, preventing it to benefit from this critical agricultural region.

The current status *quo and de facto* trade regime in the Palestinian territory is inconsistent with the Paris Protocol. This has resulted in eliminating any potential for the free movement of goods and people. Consequently, the basic concept of the Paris Protocol has not been implemented and this can be attributed to the conflict and unbalanced bargaining position between the Palestinian National Authority and Israel. The reason behind the non-implementation of the agreement is that the framework of the agreement avoided the issues of sovereignty by creating a virtual concept of sovereignty, where the two societies will first coexist under the Israeli controlled external trades, without any internal borders and without a link between the West Bank and Gaza Strip. Afterward, the process was meant to slowly continue toward the creation of the Palestinian state with a control over external trades and linking the West Bank with the Gaza Strip, but unfortunately this never happened (Arnon & Bamya, November, 2007).

Therefore, a new agreement would greatly benefit the Palestinians by separating customs from Israeli control, thereby guaranteeing the market diversification and resulting in minimizing the dependence on the Israeli market as the only market. This would allow the Palestinians to import commodities at lower prices than those imported from Israel.

Trade facilitation efforts to diversify the Palestinian trade and reduce the dependency on Israel should be the cornerstone of any initiative by the Palestinian Authority.

CHAPTER FOUR

4 TRAFFIC ANALYSIS IN THE PALESTINIAN TERRITORIES

The Palestinian territories have a large and rapidly growing population and as a result trade is also growing. The current status of the Palestinian borders and trade policy impedes any further development in trade growth. The projection of trade activities together with future demographic changes will influence the demand for transportation and trade facilitation and measure the benefits of transport facilities investment.

The cargo traffic through the Palestinian territories will be forecasted on the basis of the present environment taking into consideration the economic and political conditions. The development of the trade activities covering the Gaza Strip and West Bank depends mainly on the economical and political environment. The sensitivity of the economic and political conditions in the region will influence the actual level of cargo traffic.

4.1 Forecasting scenarios

The absence of any progress in the political negotiations between Israel and the Palestinian Authority could slow and shutdown any development. Accordingly, cargo traffic forecasts will be made for the high, medium, and low scenarios. The simplest method of traffic forecasting is to project from past trends, making whatever adjustments that may be necessary to take into consideration changes that are likely to modify these trends.

4.1.1 High scenarios

A good political relationship with Israel would allow development of trade between both countries with greater openness of the economy, development in value added services and high technological industry. As a result, the Palestinian economy would

become more competitive with a large improvement in productivity. In addition, there would be a reduction in the dependency on the public sector with increase in the private sector growth. Moreover, external trade and economic relationships with neighbouring Arab countries would increase, by rerouting trade and the establishment of the Gaza Seaport and airport.

4.1.2 The medium scenario

If the economic and political relationships with Israel are not so strong, then openness of the Palestinian economy will be restricted from being fully realized, leading to limited opportunities, especially in the investment of the private sector. This will still lead to a reduction in the dependency on the public sector, but it will still remain an important element in the economy. At the same time the economic relations with the neighbouring Arab countries will grow, but not be fully realized due to the restrictions.

4.1.3 The low scenario

The economic and political relationships with Israel are very poor, which create uncertainty with limited investments and lack of openness of the Palestinian economy, and the Palestinian entrepreneurs will have limited access to the Israeli economy. Also, external trade and economic relations with neighbouring Arab countries will grow but this growth will not achieve its full potential because of the internal restrictions on movement and the limitation on establishing the Gaza seaport and airport.

4.2 Traffic forecast

The main purpose of the traffic forecast analysis is to determine the demand for transportation and justify the investment in new infrastructures that enhance trade facilitations.

From the Palestinian Central Bureau of statistics (PCBS), historical data of exports, imports and GDP from 1998 to 2006 have been obtained and presented in Table 4. This historical data will be used to forecast the trend of exports and imports.

Table 4: Main indicators in Palestine for the years 1998-2006

Year	GDP	Import	Export	Net Balance	Total Trade
1998	$4,148	$2,375,102	$394,846	-$1,980,256	$2,769,948
1999	$4,512	$3,007,228	$372,148	-$2,635,080	$3,379,376
2000	$4,261	$2,382,807	$400,857	-$1,981,950	$2,783,664
2001	$3,989	$2,033,647	$290,349	-$1,743,298	$2,323,996
2002	$3,839	$1,515,608	$240,867	-$1,274,741	$1,756,475
2003	$4,165	$1,800,268	$279,680	-$1,520,588	$2,079,948
2004	$4,248	$2,393,267	$312,688	-$2,080,579	$2,705,955
2005	$4,503	$2,666,773	$335,443	-$2,331,330	$3,002,216
2006	$4,107	$2,835,000	$339,000	-$2,496,000	$3,174,000

Sources: (PCBS, 2007) and (PCBS, November, 2007) and (PCBS, November, 2006)

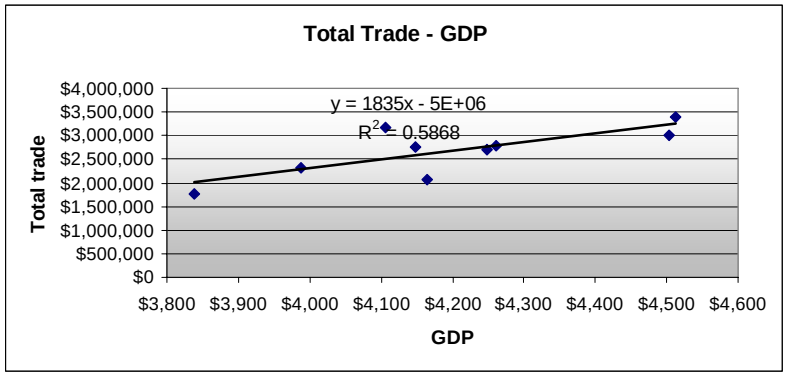

Figure 16: Total Trade – GDP

Source: The Author

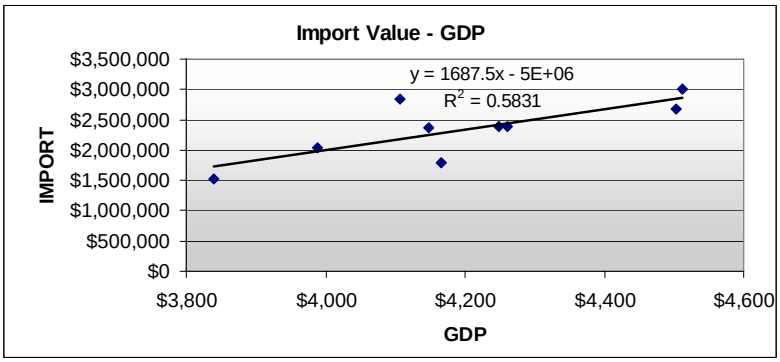

Figure 17: Import value – GDP

Source: The Author

The historical data show a strong and positive correlation between the GDP performance and the total trade value with an r value of 0.77. In other words, 77% of the increase in the total trade can be explained by the GDP growth, and 76% of the increase in the total import value can be explained by the GDP growth. Figures 16 and 17 describe statistically the regression and the trend line for both the total trade and the total import. The regression analysis shows that forecasted Palestinian trade will be mainly influenced by the GDP.

4.2.1 Projected GDP

The World Bank and RAND cooperation have forecasted the Palestinian GDP, and based on both forecasts the USAID forecasted the GDP from 2005 to 2030 with an assumption of three scenarios: high growth scenario, medium growth scenario and low growth scenario. As projected by USAID, Table 5 presents the projected GDP for 5 year intervals from 2005 to 2030. The average annual growths for the three scenarios are 8.69%, 7.54% and 5.25% for the high, medium and low growth scenarios respectively (USAID, March, 2006, p.24).

Table 5: Projected Palestinian GDP from 2010 – 2025

Year	High	Medium	Low
2,005	$3,620	$3,440	$3,369
2,010	$5,556	$4,020	$3,542
2,015	$9,992	$7,324	$5,554
2,020	$13,984	$10,099	$7,067
2,025	$19,152	$14,734	$9,382
Annual Average growth	8.69%	7.54%	5.25%

Source: (USAID, March, 2006)

4.3 Forecasted traffic value

This study will consider the projected GDP from 2010-2025 with the three different scenarios and apply it in the equation presented in Figures 16 and 17 as follows:

Total Import Value = (1687.5* GDP) – 5000000 ---------- (1)

Total Trade Value = (1835* GDP) – 5000000 ---------- (2)

From equations 1 and 2, the forecasted imports and exports value and the total trade value are as illustrated in Table 6.

Table 6: Forecasted Total trade from 2010 – 2025

Year	GDP	Imports	Exports	Total Trade
High scenario				
2010	$5,556	$4,628,205.19	$529,974.78	$5,158,180
2015	$9,992	$12,114,119.45	$1,184,097.40	$13,298,217
2020	$13,984	$18,850,767.27	$1,772,748.78	$20,623,516
2025	$19,152	$27,571,958.64	$2,534,810.49	$30,106,769
Medium scenario				
2010	$4,020	$2,036,148.32	$303,479.66	$2,339,628
2015	$7,324	$7,611,770.66	$790,680.10	$8,402,451
2020	$10,099	$12,294,685.91	$1,199,875.38	$13,494,561
2025	$14,734	$20,116,420.04	$1,883,342.10	$21,999,762
Low scenario				
2010	$3,542	$1,229,505.62	$232,994.85	$1,462,500
2015	$5,554	$4,624,830.12	$529,679.86	$5,154,510
2020	$7,067	$7,178,073.64	$752,783.46	$7,930,857
2025	$9,382	$11,084,721.86	$1,094,148.17	$12,178,870

Source: The Author

The forecasted trade figures are in $ value and to convert this into tons of cargo is a main challenge coming from the differences and changes of the value of the goods. Accordingly, the USAID report in March 2006, assumed 1.2 $/kg as an average value. This value will be assumed for the years from 1998-2007. Table 1 Appendix A shows that the total trade in 2007 was 2.502 million tons divided into 2.170 million tons of imports and 331.17 thousand tons of exports. From the forecasted values of total trade, in the high growth scenario there is an annual average growth of imports by 12.39% from 2005 to 2025 and for exports of 10.64% for the same period with an average annual growth of the total trade of 11.52%. Moreover, in the medium growth scenario the growth in the imports was 10.63% and exports of 9.01%,

with an annual average growth rate for the total trade of 9.82%. In addition, the low growth scenario shows an annual growth rate of 7.38% and 6.09% for the imports and exports respectively, with an annual average growth for the total trade of 6.48% as shown in Table 2 of Appendix A. Moreover, the forecasted GDP by the USAID shows an annual average growth of 8.69%, 7.54% and 5.25% in the high, medium and low growth scenarios respectively as shown previously in Table 5.

4.4 Volume forecast

This study will use, based on the previous analysis to forecast the volume of trade from 2008 to 2025, an average annual growth rate for the different three scenarios as shown in Table 7. The forecasted volumes from 2008 to 2025 for the three scenarios shown in Figure 18

Table 7: The assumed percentage for the different scenarios

Scenario	Percentage
HIGH	10%
Medium	9%
LOW	6%

Source: The Author

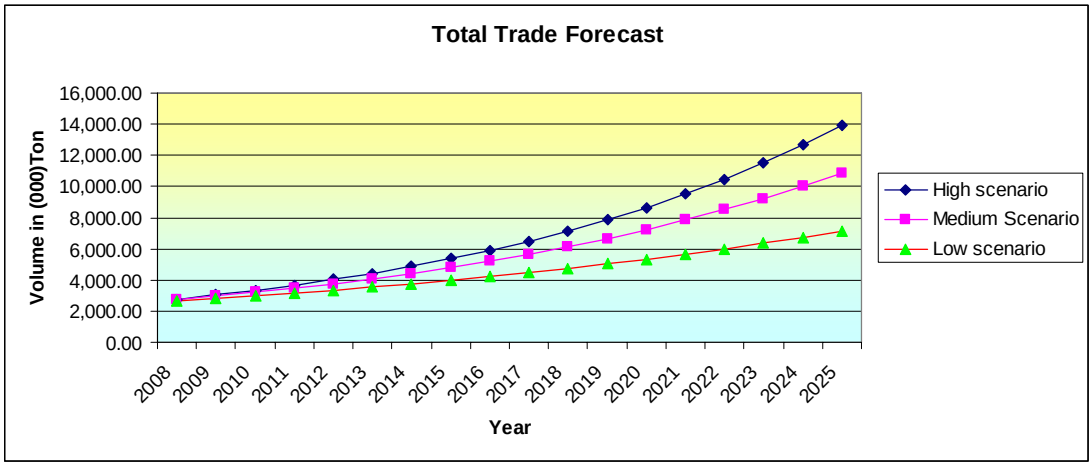

Figure 18: Forecasted volumes from 2008 to 2025 for the three scenarios

Source: The Author

The forecasted volumes of trade from Table 3 in (Appendix A), show an increase in the volume from 2.502 million tons in 2007 to 13.91 million tons in 2025 and in the medium scenario an increase to 10.86 million tons and in the low scenario an increase to 7.14 million tons.

As discussed in the previous chapters, the Palestinian territories are faced with the closure policy and restricting security measures at the borders, causing high uncertainty, unreliability, and high total logistic costs. Thus, the exporters and importers have to face greater uncertainty with higher transportation cost due to the dependence on one transit country. In contrast, if in the future there is more than one transit country, the importers and exporters are less likely to have to pay higher logistic costs for transporting goods from the Palestinian territories, because the cost of transportation across the country will go down to competitive price levels. Thus, the larger the number of transit countries, the less the probability that higher costs will have to be paid for transportation (Carcamo Diaz, 2004). The problems that relate to the four factors of trade facilitation in the Palestinian territories are summarized in Figure 19.

In this regard, it is necessary to have an understanding of the need for a new long term crossing regime that the Palestinian Authority has to consider to facilitate the trade and encourage investment in the Palestinian territories which is derived from the previous discussion. The border crossing should allow for:

- Internal movement within the West Bank
- Movement across the West Bank and Gaza Strip using Israeli borders, either to Israel or third countries via Israeli ports
- Movement between the Gaza Strip and West Bank
- Direct access to global markets either via Egypt and Jordan or via Seaport and Airport

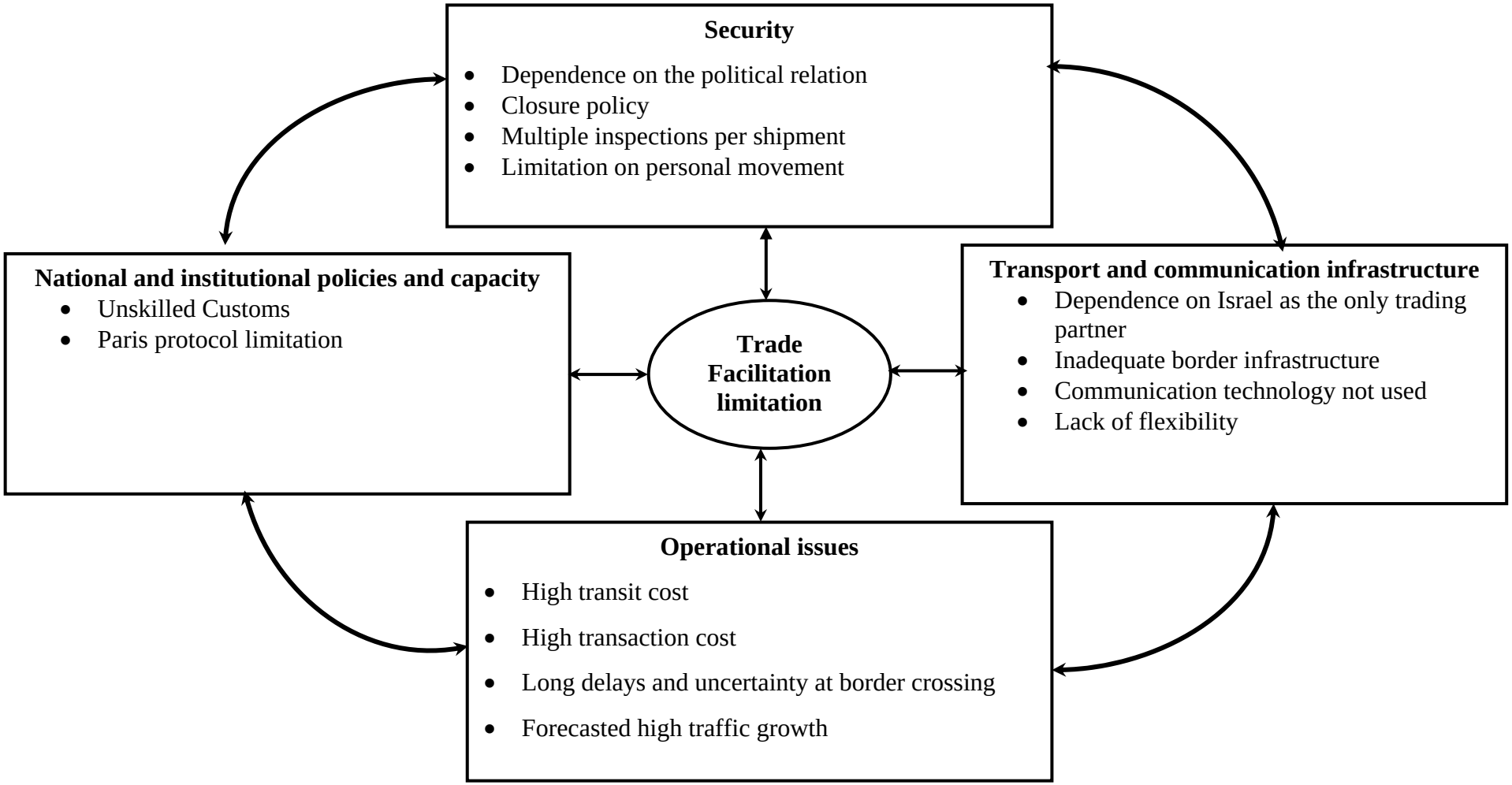

Figure 19: Limitation on trade facilitation on the Palestinian territories

Source: The Author

To achieve an integrated crossing regime, the border crossing must be transformed from one directed by security only to a jointly managed system, with the security concerns as an integral part of the system, and a balance between security concerns and trade facilitation must be existing (PALTRADE & Peres Centre for Peace, Feb, 2007, p.14).

The study proposes alternative systems for smooth movement on the borders to develop a better trading environment with Israel and third countries, with the satisfaction of Israeli security concerns. Due to the present political conflict between the Palestinian government and the Israeli government, it is best to implement these developments gradually in stages. The different alternatives that can exist are the following:

- Development of the border crossings with Israel to satisfy the condition of movement across the West Bank and Gaza Strip using Israeli borders, either to Israel or third countries via Israeli ports
- Enhancing new trade routes with Egypt and Jordan through The Rafah terminal and Allenby terminal to satisfy the condition of direct access to the global markets
- The construction of Gaza Seaport and Airport as the best option to satisfy the previous conditions
- Connecting the West Bank and Gaza Strip (the territorial link) to satisfy the condition of movement between the Gaza Strip and West Bank

These alternatives will act as tools for the Palestinian economy to recover and to encourage the trade related investments especially with the forecasted traffic flow. There is an increase in the demand to facilitate the trade through expanding the transportation network, with more efficient use of information systems and more efficient customs clearance at the international borders. The next chapters will go into detail with the approaches required and have been divided into two stages, first stage the logistic solution during the interim period and the second stage the logistic solution for the future independent Palestinian state.

CHAPTER FIVE

5 ECONOMIC APPROACHES FOR LOGISTIC SOLUTION DURING THE INTERIM PERIOD

5.1 Border crossing approach

The future of the Palestinian economy depends mainly on the enhancement of the trade logistics system, which permits a secure, reliable and competitive trading environment. The creation of a trade logistics system for the Gaza Strip and West Bank will be viable only by considering the main four movement obstacles discussed earlier (World Bank, June, 2005[a]). The current back to back system, which is implemented by the Israeli government aims to ensure full security inspection manually by unloading the goods and then loading them again in Israeli trucks as shown in Figure 20. From a commercial point of view, the back to back system causes problems such as:

- Extra handling costs, delays and damages to goods
- Uncertainty in the delivery of exports
- Just in time not considered
- Excessive trucking charges

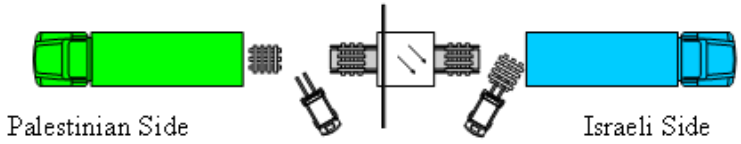

Figure 20: Back to Back system

Source: (PALTRADE & Peres Centre for Peace, Feb, 2007)

There are many different modern, efficient and secure alternatives, which have been implemented worldwide, such as tractor exchange system, securing the contents of the container using new technology and many other different approaches. All these

alternatives include the use of scanning and layered inspection (World Bank, June, 2005[a]). The back to back system must be changed, and this change can be done gradually, to develop trust and a secure trade environment. The system must be divided into phases; the first phase being a container transfer system using a scanner on the Palestinian side with an agreed procedure with the Israeli side. The following procedures should be followed:

- The truck will enter the gate according to previous appointment
- The documents will be checked at the gate, including the driver documents
- The truck will then proceed to the scanner row, with a monitor at both sides to evaluate the risk and the content of the container
- If the scanned result is clear, then the truck will be changed to an Israeli truck and continues to the Israeli side

After that, on the Israeli side, the procedure will be done again as follows:

- Document check
- Loaded containers will be scanned again for more a detailed scan and evaluation
- Empty containers will be directed to the exit gate
- In the case of unclear container content the truck will be directed to the inspection department for physical check

Figure 21 shows the procedures to achieve a container transfer system, which addresses the security concerns of the Israeli government and avoids the back to back system, enhancing the trade environment. Moreover, by expanding the number of working hours to 16 hours, the capacity of the terminal can reach 275 loaded trucks per day (World Bank, August, 2005).

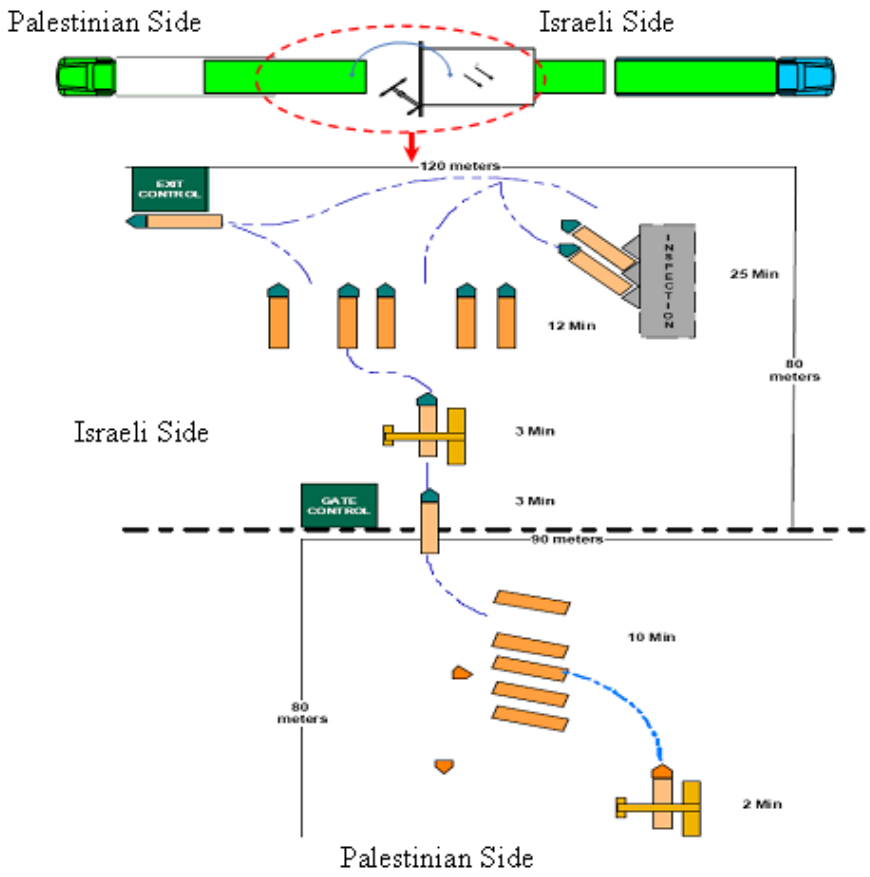

Figure 21: Container Transfer System

Source: (World Bank, August, 2005), (PALTRADE & Peres Centre for Peace, Feb, 2007), Author

The second phase is the tractor exchange system, where inbound containers will be differentiated from outbound containers in the procedures of inspection and clearance.

The inbound containers will be classified as containers imported from the Ashdod or Haifa ports, and containers shipped from the Gaza Strip/West Bank or Israel. Similarly, outbound containers are classified as containers exported from the Gaza Strip/West Bank to Israeli ports, and containers for cargo to Israel or Gaza Strip/West Bank as shown in Figure 22. When the normalized trade environment is achieved the number of scans should be reduced.

The clearance procedures, which would be implemented, are as follows:

- Truck arrives at the terminal by previous appointment with all detailed data provided (truck number, type of cargo, driver name, destination…..etc.)
- The truck will cross the border through a scanning system
- The tractor will be changed to an Israeli tractor

With consideration of that, inbound containers that have already been inspected in the Ashdod/Haifa ports or at another crossing point are provided with a seal and after checking the seal should proceed without any further inspection to the border crossing at which the change of tractor will take place. Similarly, outbound containers that are inspected at the terminal crossing and moving to Israeli ports should be sealed at the crossing point and proceed to the ports without any further inspections (World Bank, June, 2005[b]). Similarly, the reefer containers will follow the same procedures with high priority at the border crossing, and the liquid bulk cargo can be transferred with pipes and stored in a tank near the border crossing.

The implementation of these two phases will automatically allow the possibility to create the third phase that is the through traffic approach as shown in Figure 23. But it is necessary to combine these phases with management and operational reforms to enhance the reliability and efficiency of operation. Palestinian and Israeli coordination to implement these phases is required with setting standards of management procedures and a risk management system. These management procedures must be implemented at all border crossing points on the Gaza Strip and the West Bank.

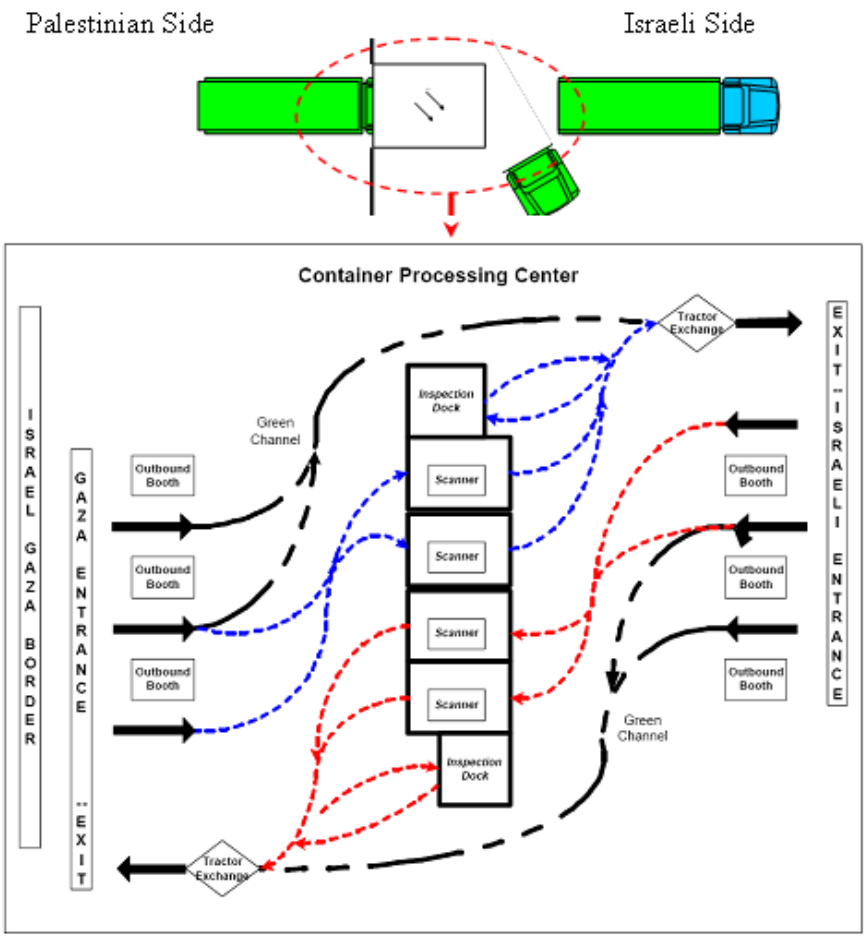

Figure 22: Tractor Exchange System

Source: (World Bank, August, 2005), (PALTRADE & Peres Centre for Peace, Feb, 2007), Author

Figure 23: Through Traffic Approach

5.1.1 Risk management and security

Risk management and security is a main method to address the security concerns of the Israeli government and the needs to facilitate trade. The introduction of a risk management system could be the best approach, where it is adopted worldwide and has been stipulated by the World Customs Organization (WCO). The system can be one of the main elements that guarantee commercial facilitation with sound security to enable a reliable and secure supply chain. This can be achieved by: (PALTRADE & Peres Centre for Peace, Feb, 2007)

- Separation of the cargo by type
- A layered inspection regime in which the inspection procedures are differentiated according to the risk associated with the type of cargo
- Information in advance that allows the data to be fed into the system and stipulates the level of inspection. The data provided should include all elements about the cargo destination and source, vehicle, driver and owner of the cargo.
- The introduction of new technology with inspection

5.1.2 Management and operations strategy

An operations strategy consists of a sequence of decisions that, over time, enables the border to achieve a desired operations structure, infrastructure, and set of specific capabilities in support of the competitive priorities. This strategy encourages a responsible and sound management environment (PALTRADE & Peres Centre for Peace, Feb, 2007). Setting up a management and operations strategy will enhance the different key areas to be improved such as:

- Responsibility, accountability and transparency
- Coordination and communication
- Third party participation
- Management team to settle disputes and commercial recourse

5.1.3 Re-routing Palestinian trade

The development of the Palestinian economy is subjected to the Israeli internal and external movement restrictions, but overcoming these restrictions is not enough for the Palestinian economy to recover unless it is supported by a new trade regime that enables the Palestinian Authority to be less dependent on Israeli policy. This isolation with Israeli control of the main borders creates the landlocked status owing to the absence of a seaport, not to the absence of a costal front. UNCTAD studies in 2004 and 2007 suggested rerouting Palestinian trade. In this regard the rerouting of trade should be considered as the second best option until the construction of Gaza Seaport (UNCTAD, 2004 & 2007).

At present, the main trade route is through Israel with a complete dependence on Israeli ports facilities. Since 2000 the complex Israeli security measures and the increase of checking points have increased the logistic cost with more transaction cost. This increase has resulted in eroding the competitive advantage of the Palestinian exports, which can be considered as a trade barrier. In 2003 the transaction costs associated with imports from Jordan were estimated at 494$ per shipment and the transaction costs from Egypt were estimated at 550$ per shipment and the costs of exporting from Gaza to Jordan were estimated at 630$ per shipment.

Table 8: Occupied Palestinian territories' main trade partners by value of trade, 2005 (Millions of $)

Region	Imports		Exports		Total Trade	
	$	%	$	%	$	%
Israel	2333	92	413	91	2 746	92
Jordan	40	2	16	4	56	2
Egypt	28	1	0.1	0	28	1
Remaining Arab countries	1	0.0	3	1	4	0.1
Europe	69	3	15	3	84	3
Asia, excl. Arab countries	45	2	5	1	50	2
American countries	9	0.3	5	1	14	0.5
Total trade: main partners	2524	100	457	100	2980	100
Grand Total	**3352**		**665**		**4017**	

Source: (UNCTAD, 2007)

From Table 8 it can be seen that Israel was the main trading partner with 92% of the total value of trade, and the second was Jordan, which accounted for 2% of the Palestinian trade (UNCTAD, 2007). The rerouting of the Palestinian trade needs to balance the economic relations with Israel for the benefit of Palestinian shippers.

5.1.4 Cost of rerouting trade

A cost benefit analysis has been applied to study the impact of using Egyptian ports as an alternative for Gaza trade and using Aqaba Port in Jordan for West Bank trade. These costs include maritime transport, ports and different aspects of costs plus land transport and border crossings. Table 9 shows that the total annual cost of rerouting the trade estimated to be almost 35$ million, whereof 23.4$ million for imports and 11.3$ million for exports. This is equivalent to $10 per ton on average, $8.8 per ton for imports and $20.6 per ton for exports. One of the main challenges facing the rerouting is the significant share of land transportation. In this situation development of land infrastructures and road network is required to reduce the transport cost. By a 20% reduction in the transport cost the annual cost would be reduced by 19$ million. Furthermore, a 50% reduction in container cost by using the Suez Canal Container Terminal (SCCT) would generate 22$ million additional savings, and if Palestine rerouted the indirect imports through Israel, this would result in savings of 38$ million by the assumption of a 20% reduction on land transport, and 44$ million with a reduction of 50% in container costs.

Table 9: Estimated annual cost of re-routing in million $

Type of shipment	Imports		Exports		Total
	Gaza	West Bank	Gaza	West Bank	
General cargo	4.71	9.25	0.40	7.66	22.02
Containers	4.88	1.85	0.23	0.79	7.75
Dry bulk	0.44	1.42	0.05	0.99	2.90
Liquid bulk	-0.23	1.04	0.04	1.11	1.95
Total	9.80	13.55	0.71	10.54	34.61

Source: (UNCTAD, 2003).

Egyptian ports are showing competitive trade logistics in terms of time, cost and quality of services compared to those in Israel; moreover, Cairo airport is providing competitive rates to the Palestinian shipments on passenger air craft, allowing Palestinian exporters and importers to access the global market. To achieve benefits from rerouting the trade, national and regional effort is needed to develop the physical infrastructure with improvement of the transit procedures (UNCTAD, 2007). The development of this trade route will provide both long and short term benefits to the Egyptian economy and in the short term there will be more demand for trucking and logistic services.

5.1.5 Rafah corridor development

The World Bank suggested in it is latest study the development of the Rafah corridor, which will mainly concentrate on quick clearance, reliability and low cost to transfer the goods, by using more alternative routes with the Egyptian gateways as shown in Figure 24, the access routes using road mode have been marked with red and the sea mode marked with blue colour.

- To Egypt's ports at the Suez Canal
- To Cairo airport
- To Al-Arish airport
- To Gulf of Aqaba to access the Gulf states

Figure 24: Alternative routes with Egyptian gateway

Source: (World-Bank, March, 2007)

The roads from Rafah to Cairo provide a good transport link with an adequate physical infrastructure and the same is the case with the road to the Suez Canal terminal. Moreover, the distance to the ports is relatively short whereby goods can be delivered within the same day. Table 10 shows the distance from the Rafah corridor to different destination ports (World Bank, March, 2007).

Table 10: Indicative Road distances and Times from Rafah Border Crossing

	Port (SCCT)	Airport (Cairo Intl)	Nuweiba	To UAE	Ashdod
Distance (km)	235	355	350 (approx.)	3000 (approx.)	40
Approx time (hrs.)	3-4	6-8	5-6	4-5 (days)	1-2

Source: (World Bank, March, 2007)

Furthermore, it is important to analyze the competitive alternative, not based on distance only, but to look in terms of costs, reliability and time required to meet the demands. The distance to Ashdod Port is approximately 40Km from the Karni crossing point, whereas SCCT is around 235Km away through the Rafah corridor. In terms of cost, considering the formal payment at the Karni crossing (informal payments range between USD 2000-USD 6000) in order to seek a comparison, the cost shows Egyptian trucking is likely to be equivalent. This is due to the lower cost of trucking in Egypt and the cheap labour cost as stated in Table 11 (World Bank, March, 2007).

Table 11: Indicative Freight Rates-Road Transport

Route	Rafah - Cairo Airport	Rafah-East/West Said	Karni - Ashdod
Vehicle	Refrigerated Truck	Marine Container	Fixed Axle
Cargo	5 – 10 Tons	40’ (2 – 20’)	40’ (2 – 20’)
Rate (USD)	$500 / Truck	$450	$450

Source: (World Bank, March, 2007)

In addition, Cairo airport provides competitive rates in comparison with Ben gurion airport in Israel, from which shipment with passenger aircraft is not allowed for

Palestinians. Moreover, Cairo airport offers direct services to Gulf markets with a shorter time for products that are sensitive to time. In contrast, for products that are less time sensitive, SCCT and land transport are very competitive options in terms of cost and reliability.

Table 12: Air Freight Comparability

USD/kg	Ben gurion	Cairo Intl
London	$1.18 - $1.22	$1.25-1.40
Dubai	n/a	$1.50-1.70
Singapore	$1.75 - $2.00	$1.75-2.20

Source: (World Bank, March, 2007)

Table 13: Sea Freight Rates

	SCCT – Port Said	**Haifa / Ashdod**
Singapore		
Time (days)	9-12	14-15
Rate USD/TEU	$535	$515
Rotterdam		
Time (days)	9	9
Rate USD/TEU	$670	$802
Jebel Ali (Dubai)		
Time (days)	3-4	6-8
Rate USD/TEU	$970	$1,126

Source: (World Bank, March, 2007)

In summary, using the Rafah corridor offers a competitive alternative to the Palestinian trades in terms of air services and sea freight. From Tables 12 and 13 it can be seen that the Rafah corridor offers a faster time to Asia, less expensive and faster time to the Gulf and equivalent time and lower cost to Europe (World Bank, March, 2007).

In order to make the Rafah corridor a viable fact, it is necessary to address the security concerns of both the Israeli and Egyptian governments.

The main policy dominating the border crossings by Israel is concerned with the security with very low consideration for trade logistic and efficiency. The security regulations and measures do not consider the Palestinian exporters' needs to deliver the goods in time agreed upon, and to be competitive in the market.

Unquestionably, the links between trade and security have not been established. To be able to enjoy reliable access to Israel and global markets, a systematic rethinking is necessary to find the balance between both security needs and trade facilitation, which can be achieved through the design of the crossing facilities, using new technology and new procedures, which satisfy both the security concerns and the trade flow (USAID & World Bank, December, 2004).

5.2 Gaza commercial seaport

Gaza Seaport would be a cornerstone for economic development of Palestine. The construction of Gaza Seaport by the Palestinian Authority would enable direct access to the market, and as a result would be the growth engine of the Gaza Strip and the West Bank economy to expand, diversify foreign trade and growth in the external trade oriented industries. These would in turn enable growth in domestic output and incomes and, even more importantly, create new employment opportunities, beside the important benefit that can be gained from the lower transportation costs for the Palestinian imports and exports.

The Gaza Seaport would encourage private sector activities, a free market economy, and regional and international trade links, while providing thousands of direct and indirect job opportunities. A direct trade outlet would reinforce investor confidence in Palestine and help attract investments to generate employment in diverse economic sectors. At present the imports and exports requirements of the Palestine are almost solely supplied through Israel and the port of Ashdod in Israel, which in the context leads to delays and extra costs for the Palestinian economy. For that reason, the Palestinian National Authority intends to secure an economic supply chain for Palestine and to meet the critical needs of the Palestinian economy in order to liberate it from the restrictions imposed on imports and exports. Moreover, the

Gaza Seaport would remove the Palestinian economy from the landlocked position. The traffic through the future Gaza port from the forecasting analysis in the previous chapter will be assumed to be 70% of the total traffic, and then this total volume of trade will be broken down by cargo type. The technical and economical study of the port undertaken by the Palestinian Authority in 1996 divided cargos into three categories: miscellaneous cargo, dry bulk, and oil bulk. Table 14 shows the break down by cargo type for the years of operation with an interval of 5 years.

Table 14: Percentage changes for the operation years

Percentage	Year1	Year6	Year11	Year16	Year21
Miscellaneous cargo	46.1%	40.8%	40.8%	40.8%	40.8%
Dry Bulk	34.3%	29.6%	29.6%	29.6%	29.6%
Oil Bulk	19.5%	29.6%	29.6%	29.6%	29.6%

Source: (Palestinian Authority, 1996)

Accordingly, the forecasted traffic volume is presented in Table 4 (Appendix A) for the three scenarios. This will show an increase in traffic from 1.926, 1.900 and 1.856, in 2008 to reach to 9.737, 7.605 and 4.999 million tons in 2025 for the high, medium and low growth scenarios respectively, as shown in Table 5 (Appendix A). This increase in traffic shows the necessity and the urgent need for developing the Gaza seaport for the Palestinian territories to be able to expand the local and regional markets. In 1995, when the port studies were done, this volume of traffic was not expected, so in this regard this will have an implication on the design of the port and the phases that it will be constructed by.

It is critical to develop the Gaza seaport in a way that is consistent with the future logistics requirements of the state of Palestine, but as a result of the current political circumstances these will not be known for some time. With a closed border scenario and a reliable and efficient corridor connecting the West Bank with Gaza, the Gaza seaport would be required to handle all the West Bank and Gaza cargo (Shaat, 2003)

5.3 Linking the Gaza Strip with the West Bank (The territorial link)

Both Gaza and the West Bank are integral parts of the Palestinian economy, so achieving economic recovery can be viable only with an unhampered flow of goods and people between these two regions. Moreover, the viability of the construction of the Gaza Seaport would depend mainly on this flow. A well functioning link would create an effective market enhancing an effective use of production factors such as labour (USAID & World Bank, December, 2004, p.13). The link between the two regions should provide flexible and low transportation cost, which could improve the competitiveness of the Palestinian products. Moreover, the implementation of the West Bank/Gaza Strip link would have a positive impact on the Palestinian economy and society. Thus, this could induce an increase of the outputs by the regional industries due to the reduction in the transportation cost, more certainty and reliability, which would allow the industries to increase the production capacity to expand markets that were not accessible before. With reducing inventory cost the prices will be reduced and result in increasing the levels of consumption. Figure 25 shows the proposed link between the Gaza Strip and West Bank as had been suggested in a study carried on by the USAID, published in March 2006.

The study was undertaken with the purpose of examining and determining the most economical and rational options for transport linkages between the Gaza Strip and the West Bank. The study considers 10 different transport alignments connecting the West Bank to the Gaza Strip along with a number of multiple combinations: road only, rail only and road and rail within the same corridor. It is very important to identify the locations of each of the proposed terminals in the Gaza Strip and the West Bank.

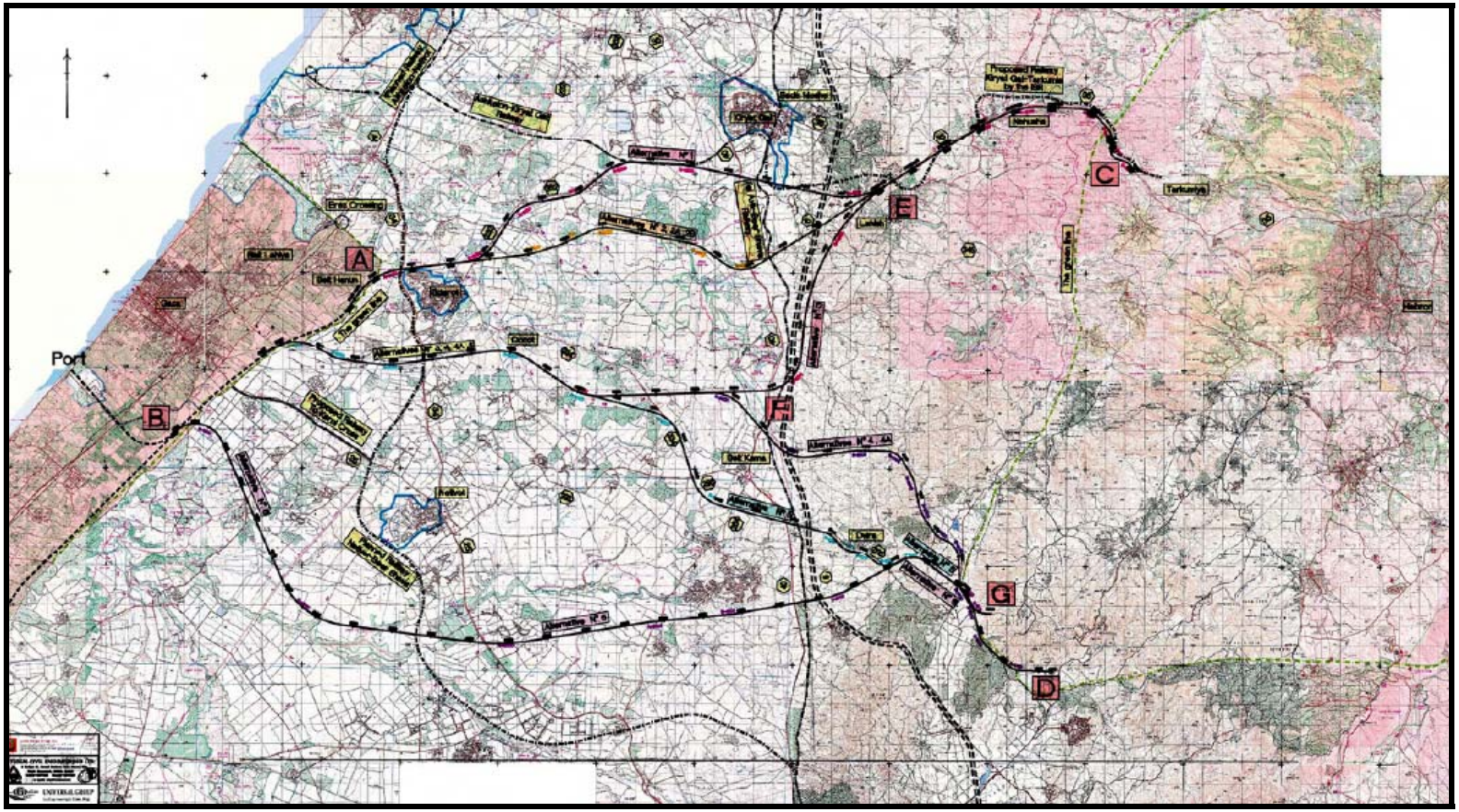

Figure 25: The proposed alternatives for the link between the Gaza Strip and West Bank

Source: (USAID, March, 2006)

5.3.1 Gaza end/start point

The link should be at a point located at a suitable site in the Palestinian territories, considering the future planned deep water access by the seaport and a direct connection to the airport. The first proposed point is located in the north-eastern part of the Gaza Strip at point A in Figure 25**,** where the second point is located near the seaport at Salah Eldeen Road, south of Gaza city indicated in Figure 25 by B. The terminal point would logically be near the north- eastern part of the Gaza, which reduces the length of the link, but the other terminal point would provide congestion free access to the major traffic generators i.e. the Seaport, Airport and Gaza City (USAID, March, 2006, p.43).

5.3.2 West Bank end/start point

On the West Bank side, the study proposed two alternatives at Tarqumia and Meitar, points C and D, respectively. Proposing the location of these two terminals was definable from an engineering point of view, where the topography was a major constraint of the West Bank. To provide the best land topography with a shortest distance a connection to Tarqumia would be the best for the terminal utilization. The alignment allows a direct access to the neighbouring towns of Hebron. The land toward Hebron rises steeply and will require a significant investment to restructure it. The other possibility is to head south toward Meitar (indicated by point D). The distance associated with each alternative mode of transport shown in Table 15.

In order to evaluate the alternatives and mode of transportation the time costs are important. The time that it can take to complete a trip by train divided into the time spent at the terminal and the travel time is shown in Table 16.

Table 15: Transport modes and distance in Km

Transport mode	Israel	West Bank	Gaza	Total
Road	42	1.4	0.6	44
Rail	42	0.7	0.6	43.3
Rail / Road	42	1.4	0.6	44

Source: (USAID, March, 2006).

Table 16: Railway Crossing Time

	Passenger	Freight Vehicles
All options	About 1 hour	About 2 hours and 45 min

Source: (USAID, March, 2006).

Using the road mode, the time is divided regarding the type and characteristic of the vehicle and with the assumption that the average speed for cars is 110km/h, 100km/h for large buses, 90km/h for medium sized trucks and 80km/h for heavy trucks, then the time required to complete the trip using the road mode is shown in Table 17.

Table 17: Time required completing the trip using road mode

	Cars	Large Buses	Medium Trucks	Heavy Trucks
All options	24 min	27 min	30 min	33 min

Source: (USAID, March, 2006).

This shows that a road connection can be faster, but the assumption of rail transport still presents a viable choice. The security concerns of the Israeli government will influence the choice. In this regard the Palestinian Authority should think ahead and implement new negotiated agreements with Israel to enhance multimodal transport systems, which will be viable by implementing the previous suggestions regarding border crossing inspections, risk management and security and operations management and procedures.

CHAPTER SIX

6 MULTIMODAL TRANSPORT TO ACHIEVE TRADE FACILITATION ON THE FUTURE INDEPENDENT PALESTINIAN STATE

Today the traditional transport services are not enough to increase the degree of participation in the global economy. What are required now are complete logistic services, including the use of information and communication technologies (ICT) and multimodal transport (MT) operations. Multimodal Transport is the transportation of goods across international borders through at least two different transport modes and under a single Multimodal Transport Document (MTD), issued by a Multimodal Transport Operator (MTO). The main aim of Multimodal Transport is streamlining procedures and documents in order to link the various modes of transport and to facilitate the movement of goods by reducing the total cost of transport through increased efficiency under the single responsibility of the MTOs (UNCTAD, 2001).

The expansions of the global trade and the way goods are manufactured have contributed greatly to the logistic revolution. The trends like Just in Time (JIT), global sourcing, outsourcing and shorter product market cycles have created a global conveyor belt. The growth increase of these systems and reducing the inventory stock allow companies to reduce their total logistic costs, which as a result have profound implications for the integration in the international economy. The sensitivity of supply chains to transport related disruptions and access to transport services, are key determinants for the competitiveness of individual firms and entire countries (D. Muller & Jentsch, August, 2002).

To enhance the efficiency of hinterland connections for ports and airports, and smooth flows of goods, the network of roads and railroads must be considered as a priority. By definition, maritime and air transport can only deliver goods and

passengers between ports and airports, but to provide the door-to-door service that customers demand, effective integration with land-based modes is needed.

In fact, land-border transport is a major source of disruptions, and because of that, streamlining of procedures, adequate staffing and physical facilities, a harmonization of standards for equipment and personnel would be desirable from an economic point of view (Muller & Jentsch, August, 2002). There is a strong connection between trade facilitation and multimodal transportation in the Palestinian territories. The Palestinian Authority should rethink the currently applied trade policy and encourage multimodal transport to achieve lower transaction cost and create reliable trade logistic solutions. The new trade policy would help the Palestinian economy to recover and reduce the dependency on Israel as the main trade partner when moving toward the independent state of Palestine. The proposed MT is intended to foster the movement of goods to and from the airport, seaport and the main international border crossings. These issues are addressed below.

6.1 Roads/Railway

It is important to take into consideration the fact that currently road transport is the only operational form of transport available in the Palestinian Territories, after the destruction of the Gaza Airport and the stopped Gaza Seaport project. The border crossing facilities and procedures put in place by the Israeli government, which are mainly focused on security aspects, with an extensive closure policy and check points, have resulted in constraints and hinder the movement of goods and people. The uncertainty at border crossings increases the transit time and reduces the opportunities of export and also creates costly and unreliable trade logistics (Euro Med, December, 2004). The road network in the future Palestinian independent state should be giving more consideration to establishing an integrated transport system. The study proposes a new system that would provide access to the main neighbouring country's economical hubs such as Amman, Cairo, Beirut, Damascus, Haifa and Tel Aviv. In addition, it would provide access to the rest of the world through direct shipping and flight connections as shown in Figure 26.

In order to integrate these modes into a regional multimodal transport system, many improvements need to take place. Therefore, the launch of the Euro Mediterranean project[4] is an important point. Similarly, the integrated transport system in Arab Mashrek by the United Nations Economic and Social Commission for Western Africa (ESCWA)[5] demonstrate another effort to enhance a regional multimodal transport system. As shown in Figure 26, the main economic hubs in the West Bank would be Hebron connecting Israel, Jordan and the Gaza Strip, and Jenin would act as economical hub for connecting Lebanon, Syria and Israel.

Similarly, the Gaza Strip would have two economical hubs at the seaport and airport connecting with the West Bank via the territorial link and to Egypt via the Rafah border and the rest of the world via shipping and air flights.

With an assumption of a heavy truck speed of 80Km/h and USD 2.5 charges per Km Table 18 shows the cost of road transportation between the domestic economical hubs. It shows the cost per Km and the distance between them and also shows the time required to deliver a container.

Table 18: The approximate Road/Rail distance between the domestic economical hubs and the cost

From	To	Distance (Km)	Charge Per Km ($)	Days Rail	Days Road	Total charges $
Gaza Seaport	Gaza Airport	33	2.5	0.10	0.02	82.5
Gaza Airport	Hebron	102	2.5	0.14	0.05	255
Gaza Seaport	Hebron	69	2.5	0.12	0.04	172.5
Hebron	Jenin	120	2.5	0.15	0.06	300

Source: The Author

[4] The Euro Mediterranean Declaration was agreed upon by the EU, Morocco, Algeria, Tunisia, Egypt, Jordan, the Palestinian Authority, Syria, Lebanon, Turkey and Israel and comprises establishing a free trade area and economic integration

[5] UN-ESCWA promotes economic and social development through regional and sub regional cooperation and integration and serves as the main general economic and social development forum within the United Nations system for the UN-ESCWA region

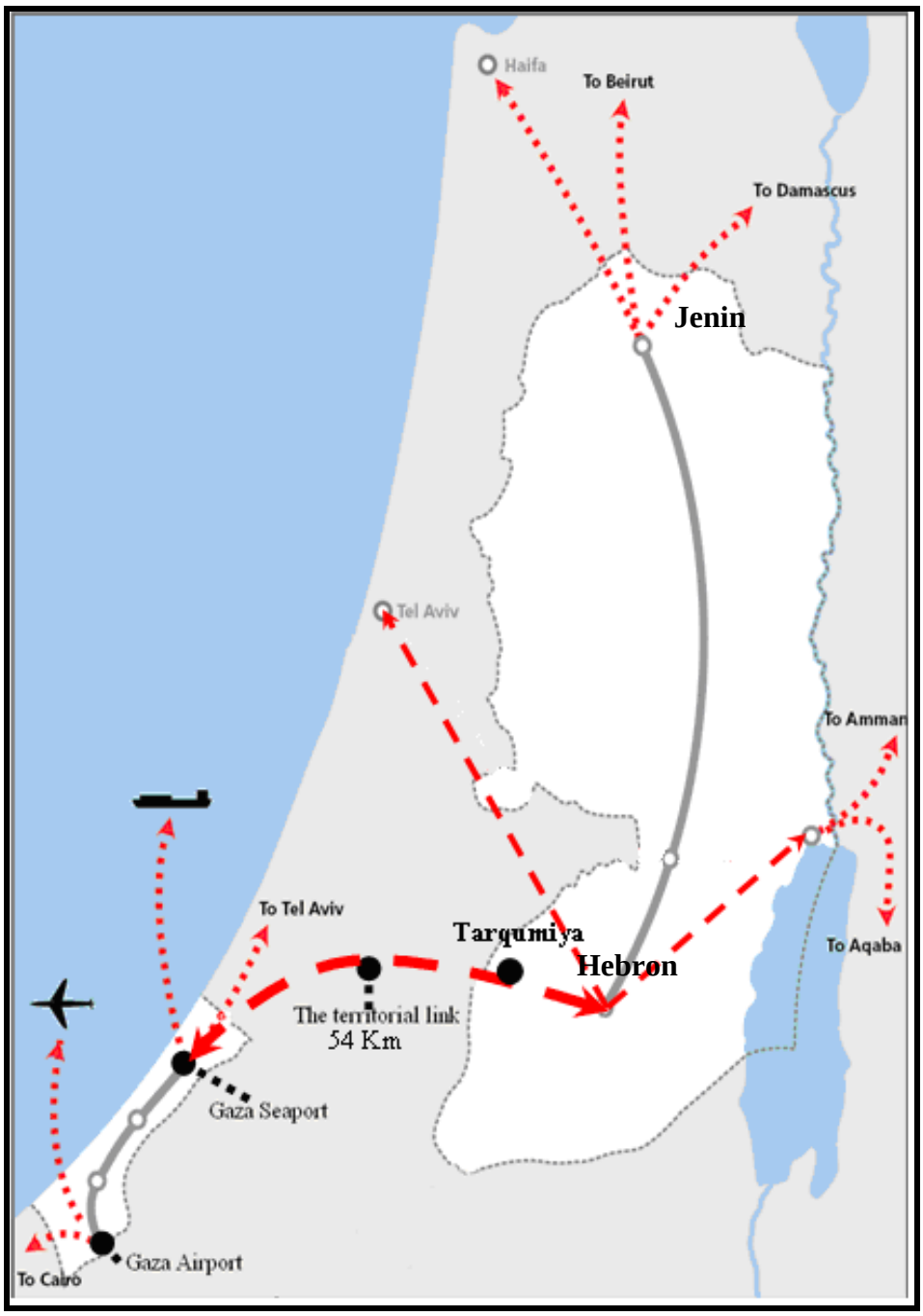

Figure 26: Proposed Multimodal transport operation in the Palestinian Territory

Source: (Suisman, Simon, Robinson, Anthony, & Schoenbaum, 2007), the Author

At present no railway network exists in the Palestinian Territory but the multimodal transport system, especially for the territorial link between the Gaza Strip and West Bank suggests construction of a railway network in parallel with the road. Railways cannot provide door to door service, but they have a cost advantage for long haul traffic. The main objective of the link is to provide reliable and high speed rail services between the main cities in the West Bank and also to the airport and seaport. In the calculation we assumed 2 hours for documentation and loading and unloading the goods from the train at the departure and arrival terminals and with 80km/h travelling speed, the distance will take the time shown in Table 18.

On the other hand, the multimodal transport system would connect the Palestinian state's economical hubs with other neighbouring countries' economical hubs via road as shown in Table 19. This shows a different picture including not only the transportation cost but also border crossings, which have an implication to increase the cost and time required for shipment. The border crossing charges have been derived from UNCTAD studies as shown in Table 20.

Table 19: Domestic hubs to international hubs

From	To	Distance (Km) approx.	Charge Per Km ($)	Total transport charge	Days to travel	Time to cross border	Total time to deliver	Charges to cross border
Hebron	**Amman**	100	2.5	250	0.05	1	1.05	360
Hebron	**Aqaba**	373	2.5	932.5	0.19	1	1.19	360
Hebron	**Tel Aviv**	67	2.5	167.5	0.03	0.5	0.53	466
Jenin	**Beirut**	160	2.5	400	0.08	3	3.08	466
Jenin	**Haifa**	48	2.5	120	0.03	0.5	0.53	466
Jenin	**Damascus**	165	2.5	412.5	0.09	3	3.09	466
Rafah	**Cairo**	355	2.5	887.5	0.18	1	1.18	250

Source: the Author

Table 20: Border crossing charges in $

No.	Item	Israel	Egypt	Jordan
1	Custom clearance	120	125	140
2	Loading and unloading	80	36	80
3	Security check	236	36	105
4	Coordination fees	30	0	0
5	Passage fees	0	40	33
6	Others	0	13	2
	Total	466	250	360

Source: (UNCTAD, 2004)

6.2 Seaport

The Seaport would be the key intermodal node and entry point for trade to the Palestinian Territories. The port is still in the planning stages and located in the Eastern Mediterranean. The seaport would be an essential part in the development of the Palestinian state in regard of identity and economy. The cargo would dominate more than passengers in the planned Gaza seaport and at the beginning imports would dominate but with developing industries, which mainly depend on a reliable shipping network, investment would be encouraged. This change would foster the development in the exports sector. The seaport should be integrated with rail/road networks to reduce the time and transactions cost and enable door to door services.

Table 21: Distance between main Eastern Mediterranean ports and Gaza Seaport and the number of days at sea

Port	Distance (nm)	Days at Sea	Dwell time At port	Ocean Freight rate/(nm)	Total Ocean charge	Port charges per FEU	Total Charge
Gioia Tauro	1008	1.75	5	0.44	443.52	100	543.52
Port Said	85	0.15	5	0.44	37.40	100	137.40
Malta Free port	992	1.72	5	0.44	436.48	100	536.48
Piraeus	624	1.08	5	0.44	274.56	100	374.56

Limassol	158	0.27	5	0.44	69.52	100	169.52
Taranto	963	1.67	5	0.44	423.72	100	523.72
Beirut	173	0.30	5	0.44	76.12	100	176.12
Tortuous	236	0.41	5	0.44	103.84	100	203.84
Haifa	105	0.18	5	0.44	46.20	100	146.20

Source: Author, (Lloyd's Register-Fairplay, 2007),http://www.youship.com/search/index.cfm

The port will be able to establish connections with the main ports in the eastern Mediterranean as shown in Figure 27. The distance between the Gaza seaport and the main ports in the eastern Mediterranean are shown in Table 21. The Table shows the ocean freight rate per container as USD 0.44 per nautical mile which was obtained from the Maersk website.[6] In addition, the number of days at sea was calculated by assuming that the average speed of a container ship is 24 knots, the dwelling time at port is 5 days and the port charges per FEU would be 100 USD.

Based on the evaluation of the other ports in the region and their expansion plans it is concluded that Gaza port would be serving the local market of the Palestinian territories and as a transit port for regional cargo. The degree of competition amongst the major ports for container transhipment in the region makes it unrealistic to expect a transhipment role for Gaza port (Appendix C)

The port would act as a feeder port connecting the Palestinian state with the European market via different ports in the eastern Mediterranean basin and to the Asian market via Egypt using Port Said Port or SCCT. The total cost for a container and the number of days expected to deliver the container are shown in Table 1 (Appendix B).

[6] The number was obtained from the website http://www.youship.com/search/index.cfm for container from Hong Kong to Taranto, Italy. The container cost USD 3250 carried over a distance of 7337 nm. The freight rate is considered to be high because it includes the Suez Canal transit due.

Figure 27: Gaza seaport with the main ports in the Mediterranean basin

Source: Author, http://www.lib.utexas.edu/maps/europe/mediterranean_rel82.jpg

6.3 Airport

To build the economy of the future Palestinian state, an international airport is of a critical importance to have access to the rest of the world. The current Gaza airport is located near Rafah in Gaza. The Airport is located approximately 35Km from Gaza city and the distance to Jenin in the West Bank is approximately 220Km. Other distances between main locations in the Palestinian Territories are shown in Table 22. The airport location has a disadvantage. The disadvantage is that the West Bank is larger than the Gaza Strip in area which means more Palestinians are living and will live in the West Bank. This makes the airport which would serve them somewhat remote, but this location is due to security reasons implemented by the Israeli government.

The main dominant in the airport will be air passengers, but certainly, the airport will send and receive cargo as well, mostly high value cargo.

Whether shipments are small or large, the integration in the MT operation is essential to overcome the physical and psychological barriers.

Table 22: The approximate Road/Rail distance between the Gaza Strip and West Bank main cities

From	To	Distance (Km)	Days Rail	Days Road
Northern Gaza	Hebron	54	0.113	0.030
Northern Gaza	Gaza Seaport	15	0.091	0.008
Gaza Seaport	Gaza Airport	33	0.100	0.017
Gaza Airport	**Hebron**	**102**	**0.136**	**0.053**
Gaza Seaport	**Hebron**	**69**	**0.119**	**0.036**
Hebron	Bethlehem	25	0.096	0.013
Hebron	Jerusalem	44	0.106	0.023
Hebron	Ramallah	48	0.333	0.250
Hebron	Jenin	120	0.146	0.063

Source: Author

6.4 Total logistic cost

The idea of total logistic cost has been derived from the dissertation logistics potential of the Aqaba special economic zone as a regional gateway by Sufian Atalah Al Muhaisen, in which the total logistic cost had been calculated for Aqaba Port. In this study the author will calculate the total logistic cost for each mode of transportation in the Palestinian state.

Provision of door to door services and enhancing regional integration will bring benefits to the Palestinian economy. They will enable shippers to minimize the total logistic cost of the transportation process from origin to destination.

Therefore, to identify the cost associated with shipments in the different alternatives explained above in sections 6.1 – 6.3 the following assumption will be considered:

F FEU container imported from a to b

D Ocean distance in nautical miles between a and b

P Port charges and expenses per FEU container

S Ocean freight rate per nautical mile

X Inland transportation cost per Km for container, assumed to be USD 2.5

Q Cross Border charges and expenses per container

Dx Inland transportation distance in Km

Ss Sea transportation speed in nautical miles/hour

Sl Land transportation speed in Km/hour

Wb Waiting time to cross border in days

Ws Dwell time at port, assumed to be 5 days

V Value of the cargo in dollar per ***F***

T Terminal charges per container

I Inventory carrying cost of cargo values, assumed to be 15%

Now, the total logistic cost can be mathematically defined using the following formula:

Total logistic cost= transportation cost + inventory carrying cost

TLC = TC + ICC …………………………………. (1)

6.4.1 Transport cost

The transportation cost is defined as the sum of all expenses paid along the transport logistic chain from the origin to the destination. In this case transport cost includes ocean freight, port expenses, trucking transport and border crossing charges, as shown in the following formula:

Transportation cost= ocean freight + port charges and expenses + cross border expenses + sum of land transportation

$$TC = (S * D) + P + Q + T + \sum (Dx * X) \ldots\ldots\ldots\ldots\ldots\ldots\ (2)$$

6.4.2 Inventory carrying cost

Inventory carrying costs refer to the costs associated with carrying a quantity of inventory. It is well known that inventory carrying cost is part of the total logistic costs and this cost needs to be optimized in any logistic system. To calculate the inventory cost it is essential to know the total time spent during the transportation process. This includes the time spent at sea, time at border crossings, port dwell time and the time during land transportation, which is clear from the formula

Total time in days = days at sea + port dwell time in days + border crossing time in days + inland transport time in days

$$W = (D/24Ss) + Ws + Wb + (Dx/24Sl) \ldots\ldots\ldots\ldots\ldots\ldots\ (3)$$

Then the inventory carrying cost will be derived from the following formula:

Inventory carrying cost = ((Value of the cargo * Inventory carrying cost of cargo values)/365) * total time in days

$$ICC = ((V * I)/365) * W \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (4)$$

From equations 2, 3 and 4 equation (1) become

$$TLC = (S * D) + P + Q + T + \sum (Dx * X) + [((V * I)/365) * ((D/24Ss) + Ws + Wb + (Dx/24Sl))] \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (5)$$

From equation 5 it is clear that the changes in different factors affect the total logistic cost such as location, value of goods, vessel speed, costs of land transportation and time costs (inventory).

By applying this formula, the total logistic costs for the different economic hubs have been calculated and are shown in Tables 1, 2 and 3 Appendix B. From this it could be concludes that:

- Land transportation is still the most expensive mode of transport, and this can be attributed more or less to the border crossing charges, and by reducing these charges, especially security charges, the land transportation could show competitiveness.
- The territorial link should be constructed to serve the Palestinian integrity with land transportation
- The seaport would be the best choice in regard to total logistic cost for imports and exports to the neighbouring countries. The total logistic cost to Cairo via land transportation is USD 1162, while in contrast, via the seaport it would cost USD 443 and the same is the case with Haifa and Beirut.
- Imports and exports to Amman and Aqaba would be via land transportation to reduce time and avoid Suez Canal dues and more port charges.
- The Egyptian ports would act as transhipment hubs for the Palestinian trade with Asian countries
- The trade with European countries could be conducted directly through the seaport. From the calculation, the shipment of an FEU container from Gioia

Tauro to Jenin via Gaza Seaport would have a total logistic cost of 1,262 USD.

6.5 Information and communication technologies

Intermodal transport system is not only the movement of cargo with more than one mode of transport, but also the exchange of information necessary to make the flow of cargo smooth and reliable (Muller, 1999).

Information technology could be seen as the major supply chain driver, affecting deeply every part of the supply chain. ICT serves as the connection between the supply chain's various stages to co-ordinate their activities to bring the lowest logistic cost as a total supply chain management. If management concentrates on improving information flow to enhance logistic efficiency and effectiveness it may be possible to satisfy all of the objectives of an efficient supply chain. Moreover, by linking members of the supply chain using ICT and sharing key data, it may be possible to achieve the following:

- Increase customer satisfaction
- Lower inventories
- Speeding up the procedures
- Decrease transportation costs
- Decreasing time at border crossings

The internet has become a popular tool in various trade and transport activities which have significant impacts on total logistic costs. Without exception the best logistic strategy would be to reduce the manual processes and increase automation to reduce delays and errors. ICTs are no less important than infrastructure developments. Internet based technology is enabling new levels of transaction automation and become demanded for global trade management. ICTs enhance efficient and effective transport trade logistics.

Internet and mobile phones are now widely used; a survey carried out by PCBS, presented in Table 23, shows the percentages of internet connections and mobile phones in the Gaza Strip and the West Bank. The number of internet connections

itself cannot give a full picture of the diffusion in ICTs, since the high number of internet connections does not mean a high rate of e-commerce activities. Table 24 shows that at present only 0.9 percent of the total population are using the internet for electronic commerce. Therefore, utilizing these technologies in transport and electronic commerce is very low and the Palestinian Authority should enhance and encourage the utilization of these technologies with the integrated multimodal transport operation. ICTs should be directed toward exchange of information and tracing goods during transit. One example of the use of ICT is the Advance Cargo Information System (ACIS). The system could improve transport efficiency by tracking equipment and cargo on transport modes and at the interface points, by providing information in advance.

Table 23: Percentage of Households in the Palestinian Territory having some ICT services, 2004, 2006

ICT Services	2004	2006
Computer	24.6	32.8
Internet	9.2	15.9
Telephone Line	40.8	50.8
Mobile phone	72.8	81

Source: (PCBS, 2006) http://www.pcbs.gov.ps/Portals/_PCBS/Downloads/book1318.pdf

Table 24: Percentage of persons in the Palestinian territory by the main purpose of using internet, 2006

Main purpose	Percentage
Education	19.3
Entertainment	16.5
Acquaintance	15
Work	9.3
E-mailing	9.1
Political issues	8.8
Scientific issues	8.5
Chatting	4.8
Spiritual issues	2.4
Updating programs	1
Electronic commerce	0.9
Others	1.2

Source: (PCBS, 2006) http://www.pcbs.gov.ps/Portals/_PCBS/Downloads/book1318.pdf

In order to facilitate the transport and have control over it from door to door, information and management systems should cover the several modes of transport. Harmonized communication standards, procedures, and transport documents on an electronic data interchange basis will increase the use of electronic transactions.

Information technology should provide:

- Communications between different operators in the system
- Tracking and tracing consignment
- Booking and reservation
- Reduce information delays and errors

At present, transport documents and procedures differ between modes and operators. The use of electronic based documents instead of paper based documents will provide an opportunity for creating harmonized system procedures. Moreover, using existing information technology such as short range communication and satellites in both Israel and Palestine to enhance the tracking and tracing of cargo across different modes will in turn meet the security concern requirements.

Another example is the Automated Cargo Expediting System (ACES) in the ports of New York and New Jersey. This system had been implemented to increase the efficiency and speed of cargo through the ports. The system provides information on location and status of international maritime shipments (arrival notice, manifests, delivery order from customhouse brokers, cargo status…). This linked with other modes of transport allows users to streamline the information management process (Muller, 1999).

CHAPTER SEVEN

7 CONCLUSION AND RECOMMENDATIONS

In order to recover, the Palestinian economy is depending mainly on trade facilitation. Therefore, integrating Palestinian transport with the regional transportation system, with the aim to establish modern logistic services to connect the Palestinian territory with the rest of the world would be done through the following measures:

- Infrastructure upgrade along the main corridors
- Improving the efficiency of border management agencies
- Optimization of information flow
- Gaza seaport and Airport should be constructed

7.1 New approached agreement

The new agreement must have the commitment of both parties, the Palestinian and Israeli, to establish free Palestinian-Israeli trade, Palestinian control over it is own internal markets in the West Bank and Gaza Strip, control over its economic relations with third parties, and control over its border crossings with Israel and third countries are essential. The agreement would also include the gradual elimination of barriers to trade.

The agreement between the Israelis and the Palestinians has to address the following points:

7.1.1 Border crossings regime

- Normalized internal economic conditions which will influence the Palestinian economy
- Palestinian internal trade must be free of physical and administrative burdens
- Full and free access to the borders, as well as the full use of all existing roads and other infrastructure.

The Rafah and Allenby border crossings with Egypt and Jordan would need to have Palestinian and Egyptian administrations to handle the operation and ensure smooth flows of goods at the Rafah crossing and the Palestinian and Jordanian administrations at the Allenby crossing. And in order to address the Israeli security concerns both Palestine and Israel have to achieve a monitoring and control mechanism such as the presence of third party monitoring or a technological solution, but at the end the Palestinian Authority must control its own borders.

Moreover, due to security concerns of the Israeli government there is an extensive closure policy and check points, which result in constraining and hindering the movement of goods and people. In addition, the border crossing facilities and procedures put in place by the Israeli government are mainly focused on security aspects. Consequently, it creates a costly and unreliable trade logistics and uncertainty at border crossings, which increase the transit time and reduce the opportunities for export.

Therefore, it is necessary to introduce some measures that can facilitate the trade and at the same time enhance the security. This can be achieved by:

- Developing the border crossings facilities
- The use of advanced security technologies
- New management procedures, which ensure that security requirements are met without unduly compromising the flow of trade

7.1.1.1 Developing border facilities

Improvements to the design and construction of the cargo transfer structures are required. A carefully planned layout has a significant effect on both efficiency and security. The layout should differ by type of crossing, since the volume and mix of vehicles will vary, and not all crossings require the same customs procedures.

7.1.1.2 Using advanced technologies

The technologies that can be used by the Israeli government as well as the Palestinian Authority for Palestinian exports to and through Israel, direct imports

from Jordan and Egypt and through international gateways can provide a method for checking cargo without removing it from the truck/container include:

- Imaging systems (scanners).
- Sniffer technology that can identify the presence of explosives in electronic devices.
- Tamper-proof seals that ensure that containers have not been interfered with in transit, thus providing confirmation of the integrity of the container or truck.

The extension of such technology will enable the flow of cargo while maintaining security at all border points between Israel and the Palestinian Territories, as well as between the Palestinian Territories and other countries.

7.1.1.3 New management procedures

The use of new management procedures supported by advanced technologies can enhance the flow of passengers and goods. These new management procedures might include the following:

- If one gateway is closed for security reasons, an alternative gateway should be made available instead.
- Performance indicators should be developed, taking into consideration in setting these indicators the involvement of commercial shippers, and international standards. These indicators could include the percentage of shipments inspected and average times for waiting and for an inspection. Service standards that can be applied at all crossings between Israel and Gaza/West Bank, and at all international gateways for Palestinian goods need to be enhanced.
- Enhancing a secure supply chain by minimizing the number of inspected cargo by using sealing, and limiting inspections to ensuring that the seals are intact. This can be applied:

- ✓ For Palestinian imports, screening and sealing would be done at the international Israeli or Palestinian gateways. For Palestinian imports via Israeli gateways, direct movement of goods in sealed containers could be allowed under bond between the Israeli ports and the West Bank or Gaza. A security check would only be required at the port. From there, imports would be transported under customs seal directly to the relevant border crossing by truck where the collection of custom duties would be performed. The purpose is to remove the container from the port area as soon as possible, where goods are stored and labour and procedures are costly, and to move them towards their destination to avoid unnecessary delays.
- ✓ For Palestinian exports and goods originating from Gaza or the West Bank, this would be done at the crossing point with Israel.

- Using computer-based risk management systems to select shipments that require physical customs inspection. To be able to apply such a system an integrated data system is required. This system will be more effective if it can be introduced in coordination with Palestinian border security and customs officials.
- Allowing truck trailers to circulate freely both in Israel and the West Bank and Gaza, and allowing containers to move door-to door. The introduction of a free-circulating trailer system would permit Israel to abolish the back-to-back system of border cargo inspections without appreciable additional risk. Free circulating trailers could be used at all crossings between Israel and Gaza and the West Bank as well as for transit cargoes.

In order to facilitate trade measures have to be taken to ensure smooth movement of goods through border crossings including cooperation and information sharing, scheduling and movement of cargo through the terminals, operational procedures and hours of working etc.

7.1.2 Modern integrated customs and security management

All borders with third parties and Israel must rely on modern and integrated customs and security management, supported by information technology.

The development of the Palestinian customs procedures would benefit the Palestinian trade and enhance the security measures that concern the Israeli government.

- Palestinian customs should assume responsibility for clearing cargo and collecting custom duties at the external borders of Gaza and the West Bank.
- Strengthening the capacity of the Palestinian customs through a number of initiatives include building the skills of the Palestinian customs service through training programs developing the ASYCUDA system used by the PA customs.
- Risk-analysis and selectivity (RAS) techniques should be introduced at all border crossings. Several studies have found that success rates in detecting fraud and crime, including illegal immigration and smuggling, are higher when RAS techniques are employed. These techniques allow most vehicles to be processed faster, while the selected vehicles can be removed from the queue to specialized buildings for inspection using risk and compliance management principles. The current focus on physical inspection should be replaced by post-release verification, including audit-based controls. While there will always be a need for some physical checking, it is preferable to encourage compliance by offering rapid transit for transactions deemed to be low risk, and to apply significant penalties to those who fail to comply. If traders know the requirements in advance, this would minimize delays and their associated costs.
- Inter-agency cooperation at land borders is also needed to reduce the cost associated with multiple controls. Specific measures should include joint clearance and the appointment of a border-crossing manager for each border crossing.

- There should also be a special regime for transit traffic, with simplified documentation and truck seals. Clearance procedures at borders would be further reduced if there were more inland customs clearance centres.
- Infrastructure deficiencies create additional bottlenecks. Investments might be needed to widen approach roads for facilities to allow several vehicles to be processed simultaneously, or for equipment to carry out required examinations on site.
- Palestinian customs should adopt service standards in close cooperation with the Palestinian private sector.

7.1.3 Territorial link between the West Bank and Gaza Strip

Gaza and the West Bank are integral parts of the Palestinian economy. To gain an economic recovery and growth, the flow of people and goods between these two regions is essential. This would enhance the use of factors of production, including labour, more efficiently and as a result, create a larger effective internal market, and provide a pathway between the economy of the West Bank and a future seaport in Gaza. Several options exist for such a link including rail connections, tunnels, fenced roads, and simple road connections. Security along this corridor can be assured using a combination of container scanning and sealing technologies at the exit border, combined with vehicle tracking devices to monitor movement. The implementation of such a link would ensure a reduction in transit time.

Unquestionably, the physical link between the two separated regions of the Palestinian territory should be established as soon as possible to guarantee the full economic integration.

7.1.4 Gaza seaport and airport

Palestinian exporters and importers should also have a direct access to the outside world. This would be done through the establishment of international sea and air gateways under Palestinian control, to provide an alternative to border crossings.

The World Bank has suggested that the reconstruction of the seaport could best be initiated through interim projects that are cheaper and faster to implement than a full service seaport. The Bank suggested developing an efficient Roll-On, Roll-Off (Ro-Ro) container port with reliable shuttle services, constructing it in stages. The first stage would be a shallow draft (5 meter) terminal to serve Ro-Ro traffic. This would provide an outlet for containerized high-value cargo that is both time-sensitive and important to the growth of the economy. The characteristic of Ro-Ro shipping does not need extensive cargo-handling equipment, requires less berth space and less operating draft. Exported and imported containers would be delivered to Port Said or the SCCT terminal. From there, containers would be transferred onto mainline vessels. In the next stage the breakwater could be extended to allow construction of deepwater berths for container and bulk vessels. This would offer potentially faster and more reliable routes, but more importantly, would create a competitive alternative to the existing routes through Israel.

Certainly, the physical infrastructures enabling the exchange of goods with the outside world should be started and agreed between the two parties. The investment in these infrastructures must be up to the standards to ensure the best possible services to all users and making the trade flow smooth. Moreover, the Law of the Sea Convention, customary international law and humanitarian law can be used to support air and sea access for importing and exporting goods under international supervision and secure operation.

7.1.5 Third party relations

The Palestinian relations with third parties should include new policies and trade initiatives to expand the labour market and trade facilitation with neighbouring countries.

In this regard the scope of the Palestinian external trade policies should be widened beyond the Paris Protocol. Moreover, the EU and European Free Trade Association (EFTA) can be used to support the expansion of external trade. Existing regional

initiatives such as the Barcelona[7] or Euro Med process, which have as their main goal to establish free trade area, in which both Palestine and Israel are parties should be supported.

But the experience of the Paris Protocol has provided lessons that an agreement between unequal parties is most likely to fail. In order to avoid such a situation it is important to take some measures for ensuring the implementation between the two parties such as

- Including a third party who must have the power to ensure the implementation
- Creation of an economic coordination committee, which represents a microcosm of the power disparity that exists on the macro level
- The agreement must follow specific steps according to a time table to be implemented

7.2 Approached solution for Jordan Valley

The Jordan Valley, as has been discussed in the previous chapters, is a critical region for the West Bank economy and in turn for the Palestinian economy. For that, trade facilitation from and to this region should be the cornerstone of any suggested solutions. The solutions that can be done take three scenarios: short term, medium term and long term solutions.

7.2.1 Short term solution

The restriction on the movement of goods and people should be removed as follows:

- The checkpoints at the entrance to Jericho should be removed
- Palestinian trucks carrying products from the Jordan Valley should have access to all border crossings

[7] The main objectives of the partnership: to build together and area of peace, security and shared prosperity. Progress towards this end is to be achieved by activities in the political area, the economic/financial area and the cultural/social sector

- Movement of agricultural goods from the Jordan Valley to all parts of the West Bank and Gaza Strip should be allowed

7.2.2 Medium term solution

Further steps are needed to gain more benefit from this region by:

- Eliminating all movement restrictions to the Jordan Valley
- Improvement in road infrastructure between the northern West Bank and the Jordan Valley
- Improvement of the road networks between Nablaus and Damia Bridge
- Opening the Damia Bridge for exports of the Jordan Valley agricultural products
- Access to the Allenby Bridge should be improved
- Development and reconstruction of water infrastructure

7.2.3 Long term solutions

- Should be fully integrated as an economical development zone, having access to third countries.

In order for the Palestinians to be ready for the changes, and be capable of taking the responsibility that will be given to them, it is important to develop the institutional capacity. The areas which need urgent developments are customs and border controls, standards and specifications, transportation networks and the border operation.
Lastly, trade facilitation is the only torch that could light the way for the Palestinian economy to recover and achieve a competitive position.

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APPENDICES

Appendix A

Table 1: Palestinian imports and exports from 1998 to 2007 (000 ton)

Sector	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Import	1,979.25	2,506.02	1,985.67	1,694.71	1,263.01	1,500.22	1,994.39	2,222.31	2,362.50	2,170.83
Export	329.04	310.12	334.05	241.96	200.72	233.07	260.57	279.54	282.50	331.17
Total Trade	**2,308.29**	**2,816.15**	**2,319.72**	**1,936.66**	**1,463.73**	**1,733.29**	**2,254.96**	**2,501.85**	**2,645.00**	**2,502.00**

Source: The Author

Table 2: The annual average growth rate for the three scenarios

High scenario	PERCENTAGE
ANNUAL IMPORT GROWTH	12.39%
ANNUAL EXPORT GROWTH	10.64%
ANNUAL AVERAGE GROWTH	11.52%
Medium scenario	PERCENTAGE
ANNUAL IMPORT GROWTH	10.63%
ANNUAL EXÅPORT GROWTH	9.01%
ANNUAL AVERAGE GROWTH	9.82%
Low scenario	PERCENTAGE
ANNUAL IMPORT GROWTH	7.38%
ANNUAL EXPORT GROWTH	6.09%
ANNUAL AVERAGE GROWTH	6.74%

Source: The Author

Table 3: Forecasted traffic Volume for the period 2008-2025, three different scenarios

Forecasted Period from 2008-2025 High Scenario																		
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Import	2,387.92	2,626.71	2,889.38	3,178.32	3,496.15	3,845.76	4,230.34	4,653.37	5,118.71	5,630.58	6,193.64	6,813.00	7,494.31	8,243.74	9,068.11	9,974.92	10,972.41	12,069.65
Export	364.28	400.71	440.78	484.86	533.35	586.68	645.35	709.89	780.87	858.96	944.86	1,039.34	1,143.28	1,257.60	1,383.37	1,521.70	1,673.87	1,841.26
Total trad	2,752.20	3,027.42	3,330.16	3,663.18	4,029.50	4,432.45	4,875.69	5,363.26	5,899.59	6,489.54	7,138.50	7,852.35	8,637.58	9,501.34	10,451.47	11,496.62	12,646.28	13,910.91
Forecasted Period from 2008-2025 Medium Scenario																		
Import	2,355.35	2,555.56	2,772.78	3,008.47	3,264.19	3,541.64	3,842.68	4,169.31	4,523.70	4,908.22	5,325.42	5,778.08	6,269.21	6,802.10	7,380.28	8,007.60	8,688.24	9,426.75
Export	359.32	389.86	423.00	458.95	497.96	540.29	586.21	636.04	690.10	748.76	812.41	881.46	956.39	1,037.68	1,125.88	1,221.58	1,325.42	1,438.08
Total trad	2,714.67	2,945.42	3,195.78	3,467.42	3,762.15	4,081.93	4,428.90	4,805.35	5,213.81	5,656.98	6,137.82	6,659.54	7,225.60	7,839.78	8,506.16	9,229.18	10,013.66	10,864.82
Forecasted Period from 2008-2025 Low scenario																		
Import	2,301.08	2,439.15	2,585.50	2,740.63	2,905.06	3,079.37	3,264.13	3,459.98	3,667.58	3,887.63	4,120.89	4,368.14	4,630.23	4,908.05	5,202.53	5,514.68	5,845.56	6,196.29
Export	351.04	372.10	394.42	418.09	443.18	469.77	497.95	527.83	559.50	593.07	628.65	666.37	706.35	748.74	793.66	841.28	891.76	945.26
Total trad	2,652.12	2,811.25	2,979.92	3,158.72	3,348.24	3,549.13	3,762.08	3,987.81	4,227.08	4,480.70	4,749.54	5,034.52	5,336.59	5,656.78	5,996.19	6,355.96	6,737.32	7,141.56

Source: The Author

Table 4: Forecasted Total Trade Traffic by type of cargo from 2008 – 2025

Forecasted Period from 2008-2025 High scenario																		
Cargo Type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Miscellaneous c	1,123	1,235	1,359	1,495	1,644	1,808	1,989	2,188	2,407	2,648	2,913	3,204	3,524	3,877	4,264	4,691	5,160	5,676
Dry Bulk	815	897	987	1,085	1,194	1,313	1,445	1,589	1,748	1,923	2,115	2,327	2,559	2,815	3,097	3,406	3,747	4,122
Oil Bulk	813.83	895.21	984.73	1,083.20	1,191.52	1,310.67	1,441.74	1,585.92	1,744.51	1,918.96	2,110.85	2,321.94	2,554.13	2,809.55	3,090.50	3,399.55	3,739.51	4,113.46
Total Trade	**2,752.20**	**3,027.42**	**3,330.16**	**3,663.18**	**4,029.50**	**4,432.45**	**4,875.69**	**5,363.26**	**5,899.59**	**6,489.54**	**7,138.50**	**7,852.35**	**8,637.58**	**9,501.34**	**10,451.47**	**11,496.62**	**12,646.28**	**13,910.91**
Forecasted Period from 2008-2025 Medium scenario																		
Cargo Type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Miscellaneous c	1,108	1,202	1,304	1,415	1,535	1,665	1,807	1,961	2,127	2,308	2,504	2,717	2,948	3,199	3,471	3,766	4,086	4,433
Dry Bulk	804	873	947	1,027	1,115	1,209	1,312	1,424	1,545	1,676	1,819	1,973	2,141	2,323	2,520	2,735	2,967	3,219
Oil Bulk	802.73	870.96	944.99	1,025.32	1,112.47	1,207.03	1,309.62	1,420.94	1,541.72	1,672.77	1,814.95	1,969.23	2,136.61	2,318.22	2,515.27	2,729.07	2,961.04	3,212.73
Total Trade	**2,714.67**	**2,945.42**	**3,195.78**	**3,467.42**	**3,762.15**	**4,081.93**	**4,428.90**	**4,805.35**	**5,213.81**	**5,656.98**	**6,137.82**	**6,659.54**	**7,225.60**	**7,839.78**	**8,506.16**	**9,229.18**	**10,013.66**	**10,864.82**
Forecasted Period from 2008-2025 Low scenario																		
Cargo Type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Miscellaneous c	1,082	1,147	1,216	1,289	1,366	1,448	1,535	1,627	1,725	1,828	1,938	2,054	2,177	2,308	2,446	2,593	2,749	2,914
Dry Bulk	786	833	883	936	992	1,052	1,115	1,182	1,252	1,328	1,407	1,492	1,581	1,676	1,777	1,883	1,996	2,116
Oil Bulk	784.23	831.29	881.16	934.03	990.07	1,049.48	1,112.45	1,179.19	1,249.95	1,324.94	1,404.44	1,488.71	1,578.03	1,672.71	1,773.07	1,879.46	1,992.22	2,111.76
Total Trade	**2,652.12**	**2,811.25**	**2,979.92**	**3,158.72**	**3,348.24**	**3,549.13**	**3,762.08**	**3,987.81**	**4,227.08**	**4,480.70**	**4,749.54**	**5,034.52**	**5,336.59**	**5,656.78**	**5,996.19**	**6,355.96**	**6,737.32**	**7,141.56**

Source: The Author

Table 5: Forecasted traffic for the Seaport by type of cargo from 2008 – 2025

Forecasted Period from 2008-2025 High scenario for traffic through the Seaport																		
Cargo Type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Miscellaneous	786	865	951	1,046	1,151	1,266	1,392	1,532	1,685	1,853	2,039	2,243	2,467	2,714	2,985	3,283	3,612	3,973
Dry Bulk	571	628	691	760	836	919	1,011	1,112	1,224	1,346	1,481	1,629	1,792	1,971	2,168	2,385	2,623	2,885
Oil Bulk	570	627	689	758	834	917	1,009	1,110	1,221	1,343	1,478	1,625	1,788	1,967	2,163	2,380	2,618	2,879
Total Trade	**1,926.54**	**2,119.19**	**2,331.11**	**2,564.22**	**2,820.65**	**3,102.71**	**3,412.98**	**3,754.28**	**4,129.71**	**4,542.68**	**4,996.95**	**5,496.64**	**6,046.31**	**6,650.94**	**7,316.03**	**8,047.64**	**8,852.40**	**9,737.64**
Forecasted Period from 2008-2025 Medium scenario for traffic through the Seaport																		
Cargo Type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Miscellaneous	775	841	913	990	1,074	1,166	1,265	1,372	1,489	1,616	1,753	1,902	2,064	2,239	2,429	2,636	2,860	3,103
Dry Bulk	563	611	663	719	780	847	919	997	1,081	1,173	1,273	1,381	1,499	1,626	1,764	1,914	2,077	2,253
Oil Bulk	562	610	661	718	779	845	917	995	1,079	1,171	1,270	1,378	1,496	1,623	1,761	1,910	2,073	2,249
Total Trade	**1,900.27**	**2,061.79**	**2,237.04**	**2,427.19**	**2,633.50**	**2,857.35**	**3,100.23**	**3,363.75**	**3,649.66**	**3,959.89**	**4,296.48**	**4,661.68**	**5,057.92**	**5,487.84**	**5,954.31**	**6,460.43**	**7,009.56**	**7,605.37**
Forecasted Period from 2008-2025 Low scenario for traffic through the Seaport																		
Cargo Type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Miscellaneous	757	803	851	902	956	1,014	1,074	1,139	1,207	1,280	1,356	1,438	1,524	1,616	1,713	1,815	1,924	2,040
Dry Bulk	550	583	618	655	694	736	780	827	877	929	985	1,044	1,107	1,173	1,244	1,318	1,397	1,481
Oil Bulk	549	582	617	654	693	735	779	825	875	927	983	1,042	1,105	1,171	1,241	1,316	1,395	1,478
Total Trade	**1,856.48**	**1,967.87**	**2,085.95**	**2,211.10**	**2,343.77**	**2,484.39**	**2,633.46**	**2,791.47**	**2,958.95**	**3,136.49**	**3,324.68**	**3,524.16**	**3,735.61**	**3,959.75**	**4,197.33**	**4,449.17**	**4,716.12**	**4,999.09**

Source: The Author

Appendix B

Table 1: Total logistic cost from the main ports in the Eastern Mediterranean to Gaza Seaport

	S	***D***	***P***	T	***Q***	***Dx***	***X***	***V***	***I***	***Ss***	***Ws***	***Wb***	***Sl***	***ICC***	***TC***	***TLC***
Gioia Tauro	0.44	1008	100	200	0	0	0	50,000	0.15	24	5	0	0	138.70	743.52	***882.22***
Port Said	0.44	85	100	200	0	0	0	50,000	0.15	24	5	0	0	105.77	337.40	***443.17***
Malta Free port	0.44	992	100	200	0	0	0	50,000	0.15	24	5	0	0	138.13	736.48	***874.61***
Piraeus	0.44	624	100	200	0	0	0	50,000	0.15	24	5	0	0	125.00	574.56	***699.56***
Limassol	0.44	158	100	200	0	0	0	50,000	0.15	24	5	0	0	108.38	369.52	***477.90***
Taranto	0.44	963	100	200	0	0	0	50,000	0.15	24	5	0	0	137.09	723.72	***860.81***
Beirut	0.44	173	100	200	0	0	0	50,000	0.15	24	5	0	0	108.91	376.12	***485.03***
Tortuous	0.44	236	100	200	0	0	0	50,000	0.15	24	5	0	0	111.16	403.84	***515.00***
Haifa	0.44	105	100	200	0	0	0	50,000	0.15	24	5	0	0	106.49	346.20	***452.69***

Source: Author

Table 2: Total logistic cost from the main economic hubs to main cities in the Palestinian state via road

	S	***D***	***P***	T	***Q***	***Dx***	***X***	***V***	***I***	***Ss***	***Ws***	***Wb***	***Sl***	***ICC***	***TC***	***TLC***
Northern Gaza - Hebron	0	0	0	0	0	54	2.5	50,000	0.15	0	0	0	80	0.58	135.00	***135.58***
Northern Gaza -Seaport	0	0	0	0	0	15	2.5	50,000	0.15	0	0	0	80	0.16	37.50	***37.66***
Gaza Seaport - Air port	0	0	0	0	0	33	2.5	50,000	0.15	0	0	0	80	0.35	82.50	***82.85***
Gaza Airport - Hebron	0	0	0	0	0	**102**	2.5	50,000	0.15	0	0	0	80	1.09	255.00	***256.09***
Gaza Seaport - Hebron	0	0	0	0	0	**69**	2.5	50,000	0.15	0	0	0	80	0.74	172.50	***173.24***
Hebron - Bethlehem	0	0	0	0	0	25	2.5	50,000	0.15	0	0	0	80	0.27	62.50	***62.77***
Hebron - Jerusalem	0	0	0	0	0	44	2.5	50,000	0.15	0	0	0	80	0.47	110.00	***110.47***
Hebron - Ramallah	0	0	0	0	0	48	2.5	50,000	0.15	0	0	0	80	0.51	120.00	***120.51***
Hebron - Jenin	0	0	0	0	0	120	2.5	50,000	0.15	0	0	0	80	1.28	300.00	***301.28***

Source: Author

Table 3: Total logistic cost from the main economic hubs to main economic hubs in the Palestinian state via road

	S	*D*	*P*	*T*	*Q*	*Dx*	*X*	*V*	*I*	*Ss*	*Ws*	*Wb*	*Sl*	*ICC*	*TC*	*TLC*
Amman- Hebron	0	0	0	0	360	100	2.5	50,000	0.15	0	0	1	80	21.62	610.00	***631.62***
Aqaba - Hebron	0	0	0	0	360	373	2.5	50,000	0.15	0	0	1	80	24.54	1,292.50	***1,317.04***
Tel Aviv - Hebron	0	0	0	0	466	67	2.5	50,000	0.15	0	0	0.5	80	10.99	633.50	***644.49***
Beirut - Jenin	0	0	0	0	466	160	2.5	50,000	0.15	0	0	3	80	63.36	866.00	***929.36***
Haifa - Jenin	0	0	0	0	466	48	2.5	50,000	0.15	0	0	0.5	80	10.79	586.00	***596.79***
Damascus - Jenin	0	0	0	0	466	165	2.5	50,000	0.15	0	0	3	80	63.41	878.50	***941.91***
Cairo - Rafah	0	0	0	0	250	355	2.5	50,000	0.15	0	0	1	80	24.35	1,137.50	***1,161.85***

Source: Author

Appendix C
STUDY OF THE COMPETITION LEVEL ON THE EASTERN MEDITERRANEAN PORTS

Conducted By: The Author

Ports throughput

The most important factor that can be used to assess the competitiveness of the ports is the port throughput. The development of the ports' throughput 2003 to 2007 is shown in ***Table1***. The largest hub in the Eastern Mediterranean region is *Gioia Tauro's Medcenter Container Terminal (MCT)* with a throughput of 3.2 million TEU in 2005 and 2.9 million TEU in 2006, 7% less than in 2005, a disappointing result that reflects more than anything the rising competition of SCCT. However, it increased again in 2007 to 3.7 million TEU.

Table 1: Total container throughput in the Eastern Mediterranean ports 2005-2007 (1000 TEU)

No.	port	2003	2004	2005	2006	2007	Avg. growth
1	Damietta	955.1	1,263	1,130.20	840.7	913.4	1.19%
2	Suez Canal Terminal	– –	19	691.7	1,646.40	1,506.60	1223.35%
3	Gioia Tauro	3,149	3,261	3,161	2,900	3,700*	4.95%
4	Taranto	685,5	763.3	716.9	892.3	384.5	-6.79%
5	Limassol	255.1	298.1	320.1	360.8	365.5	9.56%
6	Piraeus	1,605	1,542	1,394.50	1,403.40	1,380*	-3.63%
7	Malta Free port	1,300	1,461	1,321	1,600	1,900	10.67%
8	Haifa	679.2	1,033	1,107.50	1,053,1	1,142.70	15.72%
Total		8,629	9,640	9,843	10,697	11,293	8,629

Source: Containerization International yearbook, 2007, 2008. The Author

* Source: lloydslist.com

MCT, with the port's authority, are trying to be in a more competitive and reliable position as a hub by investing together to improve the port infrastructure, to develop a new 400m berth, with 18m water depth and enlarging the channel to MCT by 70m in addition to investing in five new super panamax gantry cranes and 38 straddle carriers (Woodbridge, 2007). *The Suez Canal Container Terminal (SCCT)* has shown

a colour picture since it opened in 2004 where in 2006 it handled 1.6 million TEU, more than double the 2005 Figure. SCCT terminal is gaining more traffic Table1, where a key customer of the Gioia Tauro, APM Maersk has switched a remarkable amount of transhipment services for the eastern Mediterranean and Black Sea to SCCT, enhancing new competition by the Suez Canal container terminal (SCCT) to Gioia Tauro. In 2007, SCCT added three super-post-panamax ship-to-shore container cranes to increase its capacity to 12. This development has increased the capacity of the terminal up to 2.25 Million TEU annually. At the same time SCCT has signed a concession for phase II, to double the terminal capacity to 5.1 Million TEU a year when it opens, probably in 2009, with a 2400m of quay, depth of 17.5m, 24 ship to shore gantry cranes capable of reaching 22 rows containers across and 67 RTGs. The throughput of *Damietta Container Terminal (DCT)* in 2007 was 913.4 thousand TEU as compared to 1.13 million TEU in 2005. This shows a decline in the throughput, due to the development of SCCT. To increase the competition the Damietta New Container Terminal (DNCT) project will improve the facilities with 2,360m of quay line, with a draft of 18m, 22 super-post-panamax cranes and 55 RTG units. This development in the terminal will be divided into phases and by the end of 2009 the terminal will be of a capacity reaching 2.5 million TEU a year, and with a further development this could rise to 4 million TEU annually (Woodbridge, 2007). *Taranto Container Terminal (TCT)* with its main customer Evergreen was growing faster in 2006 than the other ports in the region, with a 24.5% upturn compared with 2005, handling over 890,000TEU. But in 2006 the throughput showed a significant decline to 384,462 TEU due to the increase in the competition in the region. Moreover, the company's decision to offer a direct-call link to eastern Mediterranean ports, has actually affected the terminal by some transhipment boxes previously handled at TCT being redirected. At this time TCT is trying to offer a competitive service to other carriers looking for a regional hub status, by investing in dredging the berths down to 16.5m to handle larger container vessels. Moreover the terminal is having a negotiation with the port authority to include an additional 550m of quay into the terminal. *Malta Freeport container terminal* as a regional Mediterranean hub has

gained more advantage since it became controlled by the CMA CGM group. In 2006, the Malta Freeport container terminal handled 1.49 million TEU, as compared to the 2005 throughput of 1.32 million TEU, which gives an increase of more than 12%. This increase in the volume is attributed to new services by CMA CGM. Investments in the coming years have been planned by Malta Freeport (EUR40 million) to increase the annual capacity to more than 3 million TEU. Moreover, five new quayside cranes have been ordered and 20 more RTGs are expected to be delivered along with an increase of the length of its container quays to over 3,000 meters. In addition, there will be an extension to 318m length for the West Quay, with a water depth of 13m. This development will allow the port to handle main container lines at this quay. *Piraeus* is a main regional hub for Greece, for MSC in particular. The rapid increase in the port throughput has overloaded its capacity, resulting in industrial disruption and transhipment shifting to other locations. Consequently, the Geneva-based carrier is routing significantly more cargo through Gioia Tauro. The port of Piraeus is enhancing different developments for its handling facilities to increase the capacity by 1 million TEU a year. An extension to the Pier 1 is scheduled to be completed by the third quarter of 2008, with three new super-post panamax container cranes (Woodbridge, 2007). In 2007 the *Haifa Port* handled 1,142,700 TEU which is an increase as compared to 2006 where the port handled 1,053,094 TEU. The port authority mission for 2008 is to increase the throughput to reach 1.5 million TEU by increasing the number of gantry cranes in the Eastern Terminal by two Post Panamax units, increase the number of gantry cranes in the Western Terminal by one units, Adding 25% storage capacity to Eastern Terminal and developing Kishon East Terminal with three Gantry cranes and two shore cranes for small/ medium size container and bulk vessels (Haifa, 2006).

Market share

The market share of each port has been calculated as a percentage of the total throughput of the other ports (see Table3).

Table 3: Total container market share in the Eastern Mediterranean ports 2003-2007

No.	port	2003	2004	2005	2006	2007
1	Damietta	11.1%	13.1%	11.5%	7.9%	8.1%
2	Suez Canal Terminal	0.0%	0.2%	7.0%	15.4%	13.3%
3	Gioia Tauro	36.5%	33.8%	32.1%	27.1%	32.8%
4	Taranto	7.9%	7.9%	7.3%	8.3%	3.4%
5	Limassol	3.0%	3.1%	3.3%	3.4%	3.2%
6	Piraeus	18.6%	16.0%	14.2%	13.1%	12.2%
7	Malta Free port	15.1%	15.2%	13.4%	15.0%	16.8%
8	Haifa	7.9%	10.7%	11.3%	9.8%	10.1%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: the Author

Gioia Tauro is the market leader in the selected region with the highest market share, although it declined from 32.1% in 2005 to 27.1% in 2006 but started picking up again in 2007 with a market share of 32.8%. This can be due to the high level of competition in the region, especially from SCCT which has shown an increase in the market share from 7% in 2005 to reach up to 13.3% in 2007. However, a strong competition still exists between hub ports in the region. In 2007, Malta Port and Piraeus recorded market shares of 16.8% and 13.3%, respectively. Meanwhile, the Damietta terminal market share declined in 2006 to 7.9% but recovered in 2007 to reach 8.1%. At the same time Haifa Port started off getting more market shares in 2007 after a decline in 2006. The changes in the market shares between the ports evidence a high degree of competition which will be for the benefit of the market. At the same time, all these ports are investing more in handling facilities to improve their performance level to gain more market shares.

Market concentration

To measure the degree of competition in the market between the ports, the Herfindahl index (H) will be used. It is defined as the sum of the squared market shares of an individual company (n). It can range from (1/n) to 1, when if H=1, the firm is a totally monopolistic organization and as it decreases as the degree of competition increases (Cariou, 2008[a]).

Table 4: East Mediterranean transhipment container market concentration Herfindahl index (H) in 2005, 2007

No.	Port	2005 Throughput	2007 Throughput	Market Share 2005	Market Share 2007	H 2005	H 2007
1	Damietta	1,130.20	913.4	11.5%	8.1%	0.0132	0.0065
2	Suez Canal Terminal	691.7	1,506.60	7.0%	13.3%	0.0049	0.0178
3	Gioia Tauro	3,161	3,700	32.1%	32.8%	0.1031	0.1074
4	Taranto	716.9	384.5	7.3%	3.4%	0.0053	0.0012
5	Limassol	320.1	365.5	3.3%	3.2%	0.0011	0.0010
6	Piraeus	1,394.50	1,380	14.2%	12.2%	0.0201	0.0149
7	Malta Free port	1,321	1,900	13.4%	16.8%	0.0180	0.0283
8	Haifa	1,107.50	1,142.70	11.3%	10.1%	0.0127	0.0102

Source: The Author

Table 4 indicates that the in 2005 the Herfindahl index was relatively small (0.17836) which means that the market was highly competitive in such a period. This shows the high degree of competition among the terminal operators. However, although the SCCT and Gioia Tauro market shares increased to 13.3% and 32.8% respectively in 2007, the Piraeus market share decreased to 12.2% and Haifa Port also increased. This makes the concentration greater in SCCT and Gioia Tauro.

Nevertheless, competition between terminal operators has some what decreased as the Herfindahl index increased to 0.1874 in 2007, but a high degree of competition still exists. This shows a positive impact on the ports' clients in terms of service being provided, port dues and terminal handling charges. Certainly, the ports' throughput and market share significantly indicate the level of competition of a port. Location also has a significant impact on its attractiveness and competitiveness.

Port location

The ability to service transhipment trade is a very essential element in selecting the port which also plays a vital role in port competition. Most of the ports which are the largest transhipment centres such as Singapore resulted from advantageous location on the trade route and the proximity to regional centres of origin and destination. Malta free port and Gioia Tauro established their transhipment market position in the Mediterranean as a result of their location on the Asia-Europe trade route and

proximity to the markets of Southern Europe and Northern Africa. Several ports in the Eastern Mediterranean such as SCCT, Damietta, and Haifa are strongly competing with Malta free port and Gioia Tauro for regional transhipment trade (World Bank, 2007).

Table5: Deviation Distance from the main trade route in the Eastern Mediterranean transhipment ports

NO	From Suez Canal	To the port (nm)	To Gibralter	Deviation distance (nm)
	Port		1976	
1	**Damietta**	94	1928	46
2	**SCCT**	65	1911	0
3	**Gioia Tauro**	1018	1031	73
4	**Taranto**	997	1229	250
5	**Limassol**	272	1886	182
6	**Piraeus**	653	1482	159
7	**Malta Free port**	997	984	5
8	**Haifa**	230	2003	257

Source: Lloyd's Register-Fairplay, (2008). Distance tables

The location of the port from the main trade route is an essential element to asses the competitiveness of the port. As Table5 shows, the deviation distance from the main trade route in the Mediterranean region, the best scoring ports are SCCT, Damietta, Malta and Gioia Tauro. For SCCT the deviation distance from the route is zero, which makes it best choice to be a hub port in the Mediterranean region, especially with the increase in the fuel prices, the shipping company will be able to reduce its cost with no deviation from the route. In contrast, Piraeus, Limassol, Haifa, and Taranto are less competitive as transhipment hubs serving the East Mediterranean when it comes to deviation from main routes. Therefore, the closer the port is to the main route, the higher is its competitive advantage in the market, with consideration to the accessibility and infrastructure of the port.

Port accessibility, terminal infra and superstructure

The economy of scale in container vessels has played main roles in selecting the port that can host these large vessels especially the depth and quay length in which the

size has increased from 1980 on average from 2000 TEU to 13000 TEU now The accessibility of any specific container port relates to the potential or opportunities for the movement of containerized cargoes to and from other container ports. The examination of port accessibility is, therefore, a key element in the geographical analysis of the worldwide container transportation system. It is also a particularly relevant aspect of port competitiveness since the level of throughput at any container port is significantly and positively correlated to its accessibility (Wang & Cullinane, 2008).

The greater the level of accessibility the best cost effective it will be, and give the advantage to the port to be more attractive which will influencing the port competition.

The accessibility of the port depends mainly on the depth of the water i.e. the larger the vessel the more depth it requires. From Table 6 SCCT and Piraeus having the maximum depth of 16.5m and Malta free port with depth of 15.5m which give them an advantage over other terminals, but still many of these terminals are going into dredging projects to increase their depth such as Gioia Tauro.

Table 6: The container terminal infrastructure of the Eastern Mediterranean transhipment

NO	Port	Terminal throughput (2007) 1000 TEU	Quay length (m)	Maximum depth (m)	No. of gantry cranes	Terminal area (ha)	Storage capacity (TEU)
1	**Damietta**	913.4	1050	14.5	11	60	30,000
2	**SCCT**	1,506.60	1200	16.5	12	60	24,000
3	**Gioia Tauro**	3,700	3011	15	18	130	60,000
4	**Taranto**	384.5	1500	14.3	10	95	39000
5	**Limassol**	365.5	1695	14	4	34.25	10,000
6	**Piraeus**	1,380	3980	16.5	15	90	30,500
7	**Malta Free port**	1,900	2258	15.5	18	61.5	16,907
8	**Haifa**	1,142.70	1360	14	12	50	16,800

Source: Containerization international yearbook, (2008)

*http://www.maltafreeport.com.mt/TerminalTwo.asp

Table 6 shows the container terminal infrastructure of each terminal under consideration, showing the competitive advantage in regard to the quay length, maximum depth, number of gantry cranes, terminal area and storage capacity.

First, the terminal area shows the capability of the port to handle containers inland such as loaded, unloaded, stored and transported; the second element is the quay length where containers are loaded or unloaded from or to the vessels; this length has a direct effect on the capacity of the terminal. The standard each 1 meter can handle is around 800 TEU with a variation from port to port depending on the infrastructure and equipment used. Thirdly, the maximum depth of the sea makes it possible to receive the largest types of containers giving more advantage to the terminal; fourthly, the storage area where containers are transported and stacked (Kaysi & Mahmassani, July 2001).

Table 6 shows that the SCCT, Gioia Tauro and Malta free port are the most important ports in the region. The Table includes infrastructure elements, which play a major role in determining the capacity and level of service of a container terminal in a port, thus affecting a shipping line's decision to use that particular port.

Evaluating the efficiency of the ports using DEA

When evaluating the level of competition between the ports, these elements has to be considered collectively rather than individually (Cariou, 2008[a]), such as from the analysis above of throughput, market share, port location and accessibility and infrastructure. It is clear that Gioia Tauro is the market leader in the East Mediterranean in terms of throughput and market share as well as terminal infra/super structure; it has less competitive advantage than Marsaxlokk and SCCT in terms of port location and accessibility.

To analyze the competition in the main hub ports in the Eastern Mediterranean region using the Data Envelopment Analysis Technique using CRS model, the data in Table 5 are used as benchmarking criteria with input factors, quay length, terminal depth, terminal area, storage capacity and number of gantry cranes. And the terminal throughput in 2007 has been used as the output. The DEA technique uses a 0 to 1

scale in order to benchmarking the efficiency of different firms. The result of DEA technique in Table 7 shows that SCCT, Gioia Tauro, and Malta free port the most efficient in terms of infra and superstructure. They had achieved the maximum level of utilization by using their facilities with an efficiency of 1. Damietta, Haifa, Limassol and Piraeus are relatively less efficient with scores vary between 0.53 – 0.69 the other ports are showing the lowest efficiency, Taranto with 0.207.

Table7: Ports efficiency using CRS

DMU Name	Efficency	Optimal Lambdas with Benchmarks	
Damietta	0.69288	0.606	SCCT
SCCT	1.00000	1.000	SCCT
Gioia Tauro	1.00000	1.000	Gioia Tauro
Taranto	0.20783	0.044	SCCT
Limassol	0.53515	0.078	Gioia Tauro
Piraeus	0.60825	0.232	Gioia Tauro
Malta Free port	1.00000	1.000	Malta Free port
Haifa	0.83817	0.369	SCCT

Source: The author

Table8: input Slacks using CRS

DMU Name	Quay length (m)	Maximum depth (m)	No. of gantry cranes	Terminal area (ha)	Storage capacity (TEU)
Damietta	0.00000	0.04330	0.34644	5.19656	6235.87643
SCCT	0.00000	0.00000	0.00000	0.00000	0.00000
Gioia Tauro	0.00000	0.00000	0.00000	0.00000	0.00000
Taranto	0.00000	0.95094	0.00000	5.91991	1889.32610
Limassol	580.17282	5.68755	0.00000	5.70453	0.00000
Piraeus	1101.88355	2.29537	0.00000	7.70258	0.00000
Malta Free port	0.00000	0.00000	0.00000	0.00000	0.00000
Haifa	0.00000	0.85751	0.07201	0.77151	0.00000

Source: the Author

Table 8 shows how much the slack in the input factors as a proportion with the output, in which the port has to reduce to be efficient. But still the result is not considering the future demand of the port, which the port may be investing in to satisfy future needs even if they are not using it now (Cariou, 2008[b]).

Table9*:* Ports scale efficiency

DMU Name	*Input-Oriented VRS Efficiency*	Efficency CRS	Scale efficency
Damietta	1.00000	0.69288	0.6929
SCCT	1.00000	1.00000	1.0000
Gioia Tauro	1.00000	1.00000	1.0000
Taranto	0.97902	0.20783	0.2123
Limassol	1.00000	0.53515	0.5351
Piraeus	0.85411	0.60825	0.7121
Malta Free port	1.00000	1.00000	1.0000
Haifa	1.00000	0.83817	0.8382

Source: The author

The technical efficiency which has been derived from the CRS should be divided into pure technical efficiency and scale efficiency which can be obtained by the difference between CRS and VRS (Cariou, 2008[b]).

Table 9 shows that Taranto Port deficiency can be explained by pure technical deficiency rather than scale deficiency where Piraeus can be a small portion of its deficiency explained by scale deficiency. The other terminals which are less efficient; most of its inefficiency is explained by technical inefficiency not due to scale inefficiency; in other words, because the proportion of input to output is not good (Cariou, 2008[b]).