

**THE FRAMEWORK FOR THE DEVELOPMENT OF A MEDIUM-TERM  
TRANSPORTATION PROGRAM FOR AN ECONOMY IN TRANSITION:  
THE PALESTINIAN CASE**

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**ABSTRACT**

This paper presents the framework for the development of the transportation sector in the Palestinian territories. These territories, which are evolving towards being an independent state, after the Israeli withdrawal from Gaza Strip and parts of the northern West Bank in August 2005, are considered to represent an economy in transition. The paper considers a medium-term developmental framework, which covers the various components of the multimodal physical transportation system, as well as the institutional infrastructure. The needs have been identified based on a diagnostic study of the conditions of the transportation system in the West Bank and Gaza Strip. The transportation infrastructure suffered for about 28 years of occupation since 1967, as well as for the past five years during the current crisis. The recent and expected considerable changes on the ground require reformulation of the transportation sector development strategies. The paper presents a suggested outline for a five-year development program for the maintenance, rehabilitation, and development of the road, air, and sea transportation infrastructure. The program also identifies actions to support the development of public and freight transportation systems. It includes as well recommended policy changes to the current institutional, regulatory, and financial frameworks. Finally, the program estimates funding requirements for development of the physical infrastructure and technical assistance. The required capital investment and recurrent expenditure sum to slightly above one billion US dollars. The output can be used to facilitate approaching the international community for anticipated intervention responding to the sectoral needs.

## 1. INTRODUCTION

The Palestinian territories comprises of two geographically separated regions, the West Bank and Gaza Strip, with a total population of 3.6 million, distributed as 2.3 million in the West Bank and 1.3 million in Gaza Strip. The total area of the Palestinian territories is about 6225 km<sup>2</sup>; of which 5860 km<sup>2</sup> are in the West Bank and 365 km<sup>2</sup> in Gaza Strip. 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 Gaza Strip (1). 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 to be generally suffering from negligence and the impacts of the Israeli occupation since 1967 (1). When the Palestinian National Authority (PNA) was established in 1994, the percentage of good-condition roads formed only 15% of total, while the percentage of poor roads reached 56%, and the remaining 29% was in fair condition (2).

A number of developmental programs and plans for the transportation sector in the West Bank and Gaza Strip have been prepared by the Palestinians or the World Bank during the past 16 years. The PNA had executed numerous developmental and rehabilitation projects since its establishment on parts of the West Bank and Gaza Strip in 1994 with the assistance of the international community. About 1030 km of roads have been developed, rehabilitated, or maintained during the period from 1994 to 2003, with a total cost of 173 million USD. A new airport was constructed in Gaza at the cost of 60 million USD and construction started to establish Gaza Seaport costing about 69 million USD for its first stage (1). Figure 1 illustrates the existing transportation system in the West Bank and Gaza Strip.

Two transportation-related ministries were established; the Ministry of Transportation aiming to administer, plan, and set the policies and regulations for the development of the transportation sector, and the Ministry of Public Works, aiming to execute and maintain the developmental projects. Another institution was created just before the establishment of these ministries, the Palestinian Economic Council for Development and Reconstruction (PECDAR), to administer and finance the development and rehabilitation activities across all the sectors, including the transportation sector.

Despite all the above, efforts to maintain or develop the transportation sector were almost frozen since the beginning of the recent political crisis after the eruption of the Palestinian uprising (Intifada) in 2000. Moreover, the Israeli military reoccupied the Palestinian controlled areas, causing great damages to the physical, as well as the institutional infrastructure. Such adverse changes resulted in great losses to the infrastructure assets, considerable restrictions on the movement of people and goods, and weakened institutions. The World Bank estimated that the Israeli military caused 118 million USD of physical damage to the transportation infrastructure during 2000-2004 (3). Moreover, due to the Israeli military restrictive measures on the movement of the Palestinians and their goods since 2000, the economy became severely depressed compared with the pre-Intifada period, and closures became a key factor behind the deteriorating economic crisis as they have fragmented Palestinian economic space, raised the cost of doing business, and eliminated the predictability needed to conduct business (4).

The motorization rate in the Palestinian territories (measured in terms of the number of registered private cars per 1000 population) is reported to have dropped from 37 in 1999 to 21 in 2002 due to the consequences of the economic crisis (1). Many residents have not been renewing the registration of the vehicles they drive due to weakened PNA and its enforcement bodies, and due to their inability to pay the renewal fees because of the crisis.

The volume of traffic was affected by the current conditions, and dropped from its highest level of about 25 thousand vehicles per day on the Ramallah-Jerusalem highway before the Intifada; however, no recent traffic volumes have been measured, but surveys showed a decline in the number of daily-made trips by up to 58% in some instances(1).

## **2. STUDY OBJECTIVES**

This paper aims to present a framework for the development of the transportation sector in the Palestinian territories. The paper considers a five-year medium-term developmental time frame. Such framework comes as an update to the first published assessment and development strategy for the sector, presented within a comprehensive framework conducted by the World Bank on the eve of the establishment of the PNA in 1994 (5).

The anticipated establishment of an independent Palestinian State after the Israeli withdrawal from Gaza Strip and parts of the northern West Bank in August 2005 motivated the preparation of this study. This will assist the PNA to reformulate its developmental strategy in the sector towards the statehood, in order to remedy the damages and deficiencies in the sector, and prepare it to play its anticipated role in facilitating the development of the socio-economics of the new state. The objectives of the study is to define the framework for the developmental program for the transportation sector and its various road, air, and sea components, the public and freight transportation systems, and the sectoral institutional arrangements. The presented analysis will lead to the identification of the sectoral key issues, and to the presentation of a suggested medium-term development program.

The necessity to identify the outline for the developmental program of the sector is more pronounced due to the lack of the presence of a master transportation plan, which could guide the developmental efforts in the sector. Although the preparation of a master transportation plan was identified by the World Bank as a priority project, which should have been completed by the end of 1995 (6), the complicated situation on the ground and the political implications of such plan retarded its preparation.

The identification of transportation strategy and framework for development will facilitate presenting the rehabilitation and developmental projects to the international community and will facilitate its future assistance and intervention to respond to the needs of this sector.

## **3. METHODOLOGY**

The methodology followed in the study depends on as assessment of the conditions of the transportation sector as a whole and those for each of its constituents. However, before that was made, a survey of the recent efforts related to the development, as well as the implementation, of transportation plans, strategies, and programs for the Palestinian territories was performed. Key issues for the whole sector, and its sub-sectors were identified, focusing on the weaknesses and potentials for development. The economic scenarios were then identified and analyzed, which considerably depend on the expected political scenarios defined by the World Bank. Next, it was necessary to identify the program goals and objectives, which aim to develop the transportation sector on the medium-term for the statehood. Finally, and based on the most expected scenario, the developmental program was outlined, with a set of projects defined according to priorities considering a number of factors.

Two aspects of the methodology are briefly illustrated here: the definition of the economic scenarios and the setting of priorities. Regarding the scenarios, the World Bank had

identified three short-term economic scenarios (A-C) and one medium-term scenario (D). Each of the economic scenarios is considered as a reflection of a political scenario (3). These economic development scenarios are placed within the political context of the relations between the Palestinians and Israelis over the coming few years. Such economic-political linkage has been made as the geo-political conditions, which are unclear and not easily predictable, affect considerably the accessibility and mobility needs (and thus whether trips could be generated/distributed or not), the demand for transportation, and the pattern of the passenger traffic flow and freight movement. The scenarios are as follows:

- Scenario “A”, which considers the political stagnation case, assuming fewer curfews and restrictions on movement by Israel, and marginally greater access to Israeli labor markets with limited growth in the Gross Domestic Products (GDP).
- Scenario “B”, which considers the political progress case, assuming lower restrictions on the movement of goods and people resulting in greater remittances with accelerating growth in GDP.
- Scenario “C”, which considers the political deterioration case, assuming frequent closures and limited access to Israeli labor market with decreasing growth of the GDP.
- Scenario “D”, which considers the continuing political and economic progress over a 5-year period and is a longer term version of Scenario B.

Scenario “D”, considered as the “Optimistic Scenario”, is selected for analyses and presentation. It can be characterized to have continued political progress and economic reform. The economic and political relationships with Israel are assumed to be cordial allowing trade to develop between the two. With greater openness of the economy, Palestinians will make good use of their comparative advantage relative to the Israeli economy - its size, strength, and proximity to Palestine. With greater demand for labor in Palestine, it will depend less on remittances from labor working in Israel and will develop increased value added domestic opportunities. Strong cooperation between Israeli and Palestinian economies will initially occur in the areas of tourism and agriculture, but will help develop linkages with other sectors of their economies. Due to continued reforms to the Palestinian economy, it will become more competitive and streamlined resulting in large improvements in productivity. The dependence on the public sector will be reduced, and the private sector will become the “engine” of growth for the economy. Trade and economic relations with the immediate neighbors, Egypt and Jordan, will also grow.

One other aspect of the methodology is briefly illustrated here as well, which is related to the setting of priorities. The projects that will be identified in the plan are split into two periods; the first which includes the urgent and first priority needs and projects; while the second while presents the investment and expenditure requirements and projects needed after a short period from the anticipated date for the establishment of the Palestinian State. The projects of the first period are prioritized based on four factors: the urgency of the need for repair and rehabilitation, the impacts on solving the most pressing mobility and accessibility needs, the costs, and the risks and uncertainty imposed by external factors. The projects of the second period are prioritized based on three factors: the expected benefits and role in the socio-economic development, the costs, and to a limited extent, the risks and uncertainty imposed by external factors.

#### **4. RECENT TRANSPORTATION STRATEGIES, PLANS, AND PROGRAMS**

Before arriving at a defined strategy and developmental program for the transportation sector in the Palestinian territories, it is intended to briefly review the previous efforts towards the

formulation of development plans and programs in the transportation sector. Such efforts have been presented in a number of publications and studies, as summarized below.

The study of the future transportation needs for the Palestinians in the West Bank and Gaza Strip, prepared by Abu-Eisheh et al in 1989 and later published by the United Nations General Assembly, was the first serious study on the future needs in the field of transportation (7). It defined the objectives of the future transportation system and proposed the outline for the development of each of its sub-sectors.

The program on the development of the Palestinian national economy for the years 1994-2000, prepared in 1993 for the Palestine Liberation Organization by a number of Palestinian experts defined a developmental plan framework for the Palestinian territories in the post-occupation era (8). The program had identified a number of key transportation facilities projects totaling 1,070 million USD, including road rehabilitation and construction program, supporting public transportation and surface freight, constructing a seaport and air transportation facilities, as well as establishing the necessary institutional infrastructure.

In 1993, the World Bank had published a series of volumes on developing the Palestinian territories (6). Volume 5 dealt with the infrastructure, including the transportation sector. It identified the recommended projects categories and summarized financial needs in the sector on the short- and long-terms to equal 848 million USD, including physical investment (roads and the airport) and technical assistance.

The World Bank had published the emergency assistance program for the Palestinian territories in 1994 (5). The program comprises a set of priority expenditures for the years 1994-1996, focusing on removing the most critical infrastructure bottlenecks by rehabilitating and upgrading public facilities in key sectors of the Palestinian economy, including transportation. The public investment needed in the transportation sector was estimated at about 70 million USD. Many of the projects included in the program were implemented.

Regional plans for the Palestinian territories prepared by Ministry of Planning and International Cooperation (MOPIC) in 1998 identified the conceptual framework for the development of each of the sectors, including the transportation sector, within a comprehensive developmental outline for the West Bank and Gaza Strip regions (9), (10). The objectives of the plans include improvement of the transportation systems and accessibility at the inter- and intra-regional levels, concentrating on the development of new road links and upgrading and enhancing the capacities of existing roads on one hand, and the efficient use of transportation system on the other.

Since the establishment of the PNA, it had been regularly preparing 3-5 year plans, called the Palestinian Development Plans, considering all developmental issues and sectors. The latest was the Palestinian Development Plan produced in 1999 (11). Information on the 1999-2003 plan indicated the inclusion of an estimated budget of 192.6 million USD for road and border crossings projects and building the capacity of institutions in the sector. Moreover, it defined strategic projects, including the completion of the airport and constructing a seaport, totaling 90.5 million USD. Most of the projects included in the program were not implemented, due to the start of the Intifada in 2000.

Finally, a study was prepared by the World Bank on the transportation sector in the West Bank and Gaza in 2000 (12). The study formulated a strategy aiming to respond to the various development challenges facing the sector. It highlighted the need to establish a sound institutional framework; maintain the existing poor road network; develop border crossings; and develop road, air, and sea transportation systems. The study identified the priorities and estimated the investment needs in the transportation sector at about 1.26 billion USD for the short-, medium- and long-term. Moreover, it identified a five-year public expenditure needs program, which had components with estimated costs reaching 664 million USD. Due to the

start of the Intifada shortly after that, none of the projects included in the program were implemented.

Based on the above, the developed plans prepared years ago have not materialized, where developments on the ground after their preparation prevented them from being implemented. The need, therefore, exists to revisit the issue of identifying the framework for development of the transportation sector for both alleviating the impacts of damages to this sector during the current political crises, and upgrading the sector to be able to perform its role towards the statehood stage.

## **5. THE IDENTIFICATION OF KEY TRANSPORTATION SECTOR ISSUES**

A diagnostic study on the current status of the various transportation sub-sectors has been prepared by Al-Sahili and Abu-Eisheh (13). An assessment of such diagnostic study results in defining key transportation sectoral and sub-sector issues. Based on such, the sectoral developmental framework can be well defined.

### **5.1 Key Issues**

A number of general sectoral key issues, as well as some sub-sector issues, are presented here. These include the following:

- There have been severe restrictions imposed on the movement of passengers and goods within the Palestinian territories and with the outside world through establishing permanent road blocks and enforcing closures of areas. These have been combined with Israeli demands for special permits to travel, and restrictions forbidding the Palestinians from using specific roads and transportation facilities. The impacts of these measures, which were intensified since the start of the Intifada, include limiting mobility and accessibility, increasing travel time and cost, and restricting the transportation of products and goods (4).
- There is considerable damage to the various components of the transportation sector as a result of Israeli military actions, which has to be repaired or replaced. Damage resulted in segments of the national, regional, and urban roads; public and private transportation vehicles; facilities and equipment within the Gaza International Airport; and facilities and installations of the under-construction Gaza seaport (3).
- There is still no linkage or free passage between the West Bank and Gaza Strip. This is a key national issue, where connecting the two physically separated parts of the Palestinian territories via a transportation corridor would lead to their integration, lead to a self-dependant transportation system, facilitate flow of people and goods, and enhance economic development of the Palestinian territories. The two major Palestinian gates to the outside world and markets, the airport and the seaport that are both located in Gaza Strip, are not accessible to the Palestinians living in the West Bank.
- The inadequate road facilities, which restrict accessibility of a considerable portion of the population and limited accessibility to reliable public transportation services for considerable portions of population centers.
- Coordination between the components of the transportation sector and inter-modal transportation is lagging. Furthermore, no proper road infrastructure is present within Gaza Strip that connects the road network with the airport, the seaport, border crossings, and the planned free trade zones.

- The inability of the Palestinians living in the West Bank to utilize the existing airport at Qalandia north of Jerusalem, which is currently controlled and operated by the Israeli authorities.
- The poor structure and organization of public transportation. The privately operated bus companies lack proper management and coverage, and operate sometimes with losses. However, there is excess supply of the competing shared-taxis, which are commonly used as intra- and inter-urban public transportation means.
- The flow of goods through border crossings or through Israel is controlled by the Israeli authorities, causing additional travel and shipping costs and losses or damage of products due to lengthy and complicated inspection processes.
- There are political constraints, which retard the development of a sound and efficient transportation system. These include the territorial classification of Palestinian areas into different classes with various degrees of freedom to manage the transportation facilities for each class; the weak control of the PNA on the ground; the realities due to the construction of the separation wall around parts of the West Bank; implications of the economic relationships with and the reliance on Israel; and dealing with the Israeli bypass and settlement roads.
- Development activities in the transportation system have not been following a national transportation master plan. The inexistence of such plan has led to projects, which, in a number of cases, are not coordinated, or not in harmony with the prioritized national needs within the transportation sector.
- The institutional structure of the Palestinian ministries and other agencies involved in the transportation sector suffers from lack of clearly defined responsibilities and functions, lack of coordination, inefficient management structures, lack of regulatory framework, and limited experienced and well trained human resources.
- The lack of sufficient well-trained human resources who can efficiently participate in the developmental efforts, and the limited capacity of the contractors, consultants, as well as the public sector, could restrict their potential to deal with a relatively massive transportation development and construction program.
- Funding is a limiting factor for both the development of the transportation sector and the maintenance of the road network. Most funds came from international donors and were spent to finance rehabilitation and upgrading of roads, and very little was devoted for road development and construction of new roads. The allocated funds by the PNA for the transportation sector and for roads are very limited and are mostly directed towards maintenance of roads through the Ministry of Public Works and Housing. The transportation related taxes and fees are not directed towards financing transportation projects.

## **5.2 Program Goals and Objectives**

The program goals and objectives aim at the development of the transportation sector on the medium-term for the statehood. The developmental objectives include:

- To repair the damage and alleviate the impacts caused to the transportation sector by Israeli restrictive measures, including those related to the construction of the separation wall.
- To foster economic growth and social development, provide employment opportunities for labor absorption, and reduce poverty.

- To correct the distortions and deficiencies in the transportation sector and facilitate balanced road development taking into account the underserved rural communities and the arrival at equitable development among the various regions.
- To eliminate the accumulated maintenance backlog in the road sub-sector.
- To facilitate the recovery of the private sector entities involved in the transportation sector after years of losses causing closing of businesses, specially the contracting and consulting industries, as well as the bus and freight transportation firms.
- To support transportation projects that enhance self-reliance and that lay the foundation for sustainable systems, including the construction of the West Bank-Gaza Strip Corridor, and the development projects for air and sea transportation systems.
- To improve the capacity of the existing institutions, increase the level of coordination, develop human resources in the transportation sector, and develop the legislative framework for proper operation and management of the sector.
- To encourage research and development and orient activities in this regard to support development of the sector based on sound scientific and practical basis.
- To mobilize the international community towards providing assistance and financial resources to aid in upgrading and developing the sector.

## **6. OUTLINE FOR A MEDIUM-TERM DEVELOPMENT PROGRAM**

Based on the above indicted issues and problems, and considering the stated goals and objectives, an outline is presented here to guide in identifying a five-year medium-term multi-modal developmental program for the transportation sector. The proposed program is identified for each of the transportation sub-sectors and for public and freight transportation systems. In addition, proposed institutional arrangements are highlighted, which include changes in the regulatory and financial frameworks.

However, it is to be stressed that transportation development program for the Palestinian territories is affected by a number of uncertainties posed by the unpredicted evolution of the outcome of the Israeli withdrawal and the ongoing, but stumbling, peace process. Primarily, these relate to the extent, timing, and arrangements related to the aftermath of the Israeli withdrawal from the West Bank and Gaza Strip; the final location of the separation wall being constructed, which surrounds parts of the West Bank; the extent of the allocation of responsibilities between Israeli and Palestinian authorities for various parts of the transportation network; control over international transportation links, such as the Gaza International Airport, Gaza Seaport, and various land connections and border crossings with neighboring countries; the opportunities to establish a proposed permanent transportation link between the West Bank and Gaza Strip; and the extent of flow of external funds to support the developmental program. A number of alternative scenarios were assessed as indicated in Section 3, and only one of which is being presented in this paper, the optimistic medium-term scenario "D". This scenario assumes the establishment of a Palestinian State shortly after the partial withdrawal of Israel in August 2005, associated with minimal political constraints.

The components of the development program have been identified in collaboration with the ministries and agencies involved in the transportation sector considering the indicated criteria, and priorities have been set as indicated in Section 3.

### **6.1 Road Transportation**

The main findings in the road transportation sub-sector include the need to link the West Bank and Gaza Strip together via a special corridor, construct border crossings, remedy,

maintain, develop, upgrade roads, and enhance traffic capacity and safety. The proposed development program for this sub-sector includes:

- Constructing the West Bank-Gaza Strip Corridor and constructing proper border crossings.
- Restoration and repair of the damaged road and traffic systems, as considerable portions of the road network and traffic systems were physically damaged due of the Israeli actions during the last five years.
- Launching a road maintenance and rehabilitation program, including the initiation of a road maintenance management system, due to the poor pavement conditions and to prevent further deterioration and the eventual loss of the existing facilities.
- Upgrading the major links connecting the urban centers and connecting the Palestinian territories with the outside world. Sections with deficient capacity or deteriorated pavements should be reconstructed.
- Enhancing accessibility to several rural village communities, which are served by inadequate roads through rehabilitating such roads or constructing new ones. This will alleviate deficiencies related to poor accessibility between adjacent rural communities and with the agricultural fields.
- Expansion and upgrading of the internal roadway networks and facilities within the various urban and rural communities, as many parts of internal networks in the Palestinian territories experience high traffic congestion and limited capacities (3). Traffic management plans are highly needed for most major urban areas.
- Enhancing road safety through developing and implementing a safety program on the national level, accompanied with strengthening traffic police and enforcement measures.
- Development of a Road Master Plan within a comprehensive Master Transportation Plan for the Palestinian territories. This plan is essential to integrate the road network and transportation facilities and services with the development plans on the national and regional levels.

## **6.2 Air Transportation**

The main findings in the air transportation sub-sector include the necessity for immediate rehabilitation and operation of Gaza International Airport, performing human resources development, and preparing to operate the West Bank airport at Qalandia. The proposed development program for this sub-sector includes:

- Resuming the operation of Gaza International Airport after the immediate rehabilitation of the damaged parts of the airport especially the runway system and the other various parts of the infrastructure, and repairing and upgrading the operational systems, including the operations and control equipment, navigational equipment and radar system, and the metrological station.
- Performing the necessary training for the airport staff, especially the technical staff, as they have not been practicing their work for years, nor they are aware of the recent developments in the field and in using the modern navigational and control equipment.
- Developing the air transportation services in the West Bank, through arrangements that ensure the Palestinian could control, expand, and operate Qalandia Airport.

### **6.3 Sea Transportation**

The main findings in the sea transportation sub-sector include the urgent need for the repair and complete the construction of Gaza Seaport, upgrading the fishery port, and performing human resources development. The proposed development program for this sub-sector includes:

- Starting the immediate repair and reconstruction activities in the seaport site in Gaza, as having an operational seaport, trade with the outside world will be facilitated and increased and the Palestinian economy will be improved.
- Initiating a capacity building program to train the Seaport Authority personnel in relevant areas, such as port planning and management, sea transportation operations, environmental pollution, and quality control.
- Repairing and upgrading the structures of the fishery port, and transferring the responsibility of its control to the Seaport Authority.

### **6.4 Public Transportation**

The main findings in the public transportation sub-sector include the preparation and implementation of strategies to maximize the efficiency and coverage of provided services, and supporting the operators of public transportation. The proposed development program for this system includes:

- Establishing development strategies and the necessary policies to enhance public transportation through changes in the composition and structure of the passenger transportation industry, operating practices, and legislation in order to arrive at efficient, reliable, and affordable public transportation system.
- Initiating detailed studies by the MOT and municipalities on coverage, routes, and the traffic carried in order to arrive at sound public transport plans and services.
- Provision of financial and technical support to the operators of public transportation, as this is one of the priority areas in the sub-sector, due to economic hardships which already facing the sub-sector, in order to maintain the existence, improve, and expand the provided services. Furthermore, technical support is needed to help the public transportation operators perform soundly and up to standards.

### **6.5 Freight Transportation**

The main findings in the freight transportation sub-sector include the coordination to facilitate freight traffic, the construction of freight border crossings, assistance to consolidate freight services and increase their efficiency, and facilitating inter-modal freight transportation. The proposed development program for this system includes:

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- Coordination and arrangements with the Israeli authorities to facilitate freight traffic within the West Bank and between the West Bank and Gaza Strip, as there are considerable restrictions on the ability of the freight transportation to serve the Palestinian economy. This will result in reducing transportation cost and travel time, limiting damage to the transported goods, thus encouraging private sector involvement and investment in the sub-sector.
- Construction of proper freight land border crossings, and the provision of appropriate linkage between these crossings with the major commercial centers in the West Bank and Gaza Strip.
- Provision of assistance and granting incentives towards the consolidation and efficiency of freight services, as the majority of the freight industry is provided by the

informal sector, which is characterized as small scale and unregulated. This should be associated with proper training to improve the managerial skills and to arrive at an organized freight industry.

- Encouraging and facilitating inter-modal freight transportation which integrates land, air, and sea transportation systems. Inter-modal plans to coordinate among these systems and their connection with potential free trade zones are to be developed. This will also facilitate freight transit to and from neighboring countries.

## **6.6 Institutional Structure**

The main findings in the transportation institutional structure and arrangements include the need for institutional reform and development of proper legislations, strengthening the institutional structures, developing of guidelines, norms, and standards, and establishing a Road Fund as a mechanism to finance road maintenance and development. The proposed development program in this area includes:

- Development of the proper legislations and implement the identified institutional reform steps needed in order to well define the mandate, responsibilities, and functions of each of the key stakeholders in the transportation sector.
- Strengthening the aspects of the institutional structures, which exhibit weakness, such as in the fields of planning, management, and traffic operation, by supporting the appointment of qualified staff with proper experience and developing human resources.
- Developing the necessary construction and maintenance guidelines, and road norms and standards.
- Updating the World Bank funded study on the establishment of a Central Roads Administration (CRA), taking into consideration current institutional realities, and arranging towards the preparation of immediate and smooth establishment of the CRA.
- Establishing the recommended Road Fund (2), where enough funds collected through the charges and taxes levied on road users can be transferred to overcome the financial constraints that limit the development and maintenance of the road network.
- Establishing a central unit for research and development in the field of transportation.

## **7. FUNDING REQUIREMENTS**

Finally, the estimated funding and investment requirements for physical and technical assistance needs to meet developmental outline program highlighted above are presented. The estimates include both the capital investment and recurrent expenditure for the coming five years. The funding requirement should take into consideration the needs to repair damages in the sector caused by the Israeli occupation, eliminate the backlog and bottlenecks in the system, rehabilitate the existing systems, and construct basic developmental projects. The presented requirements are corresponding to the scenario of establishing a Palestinian State after the planned Israeli partial withdrawal starting August 2005, associated with minimum political constraints.

Many items of the funding program are based on an update of the projects and expenditure estimates presented in the Palestinian Development Plan for the period 1999-2003 (11), and those included in the World Bank study prepared in 2000 (12), where the vast majority of the projects in the program were not implemented due to the recent crisis which started in 2000, with the necessary modifications to reflect the deterioration in the conditions

of the transportation facilities. The five-year plan has been split into two periods; the first including the urgent and first priority needs and projects; while the second presenting the investment and expenditure requirements and projects needed shortly after the anticipated establishment of the Palestinian State. The recurrent expenditure covers the cost associated with planning, implementing, monitoring, and administering the transportation sector program. Items include wages, salaries, goods and services, and other administrative expenses.

Table 1 presents a summary of total transportation sector expenditure needs for the coming five years. Details on the needs are presented in the recent World Bank study (1). The total program expenditure needs reached 1013.0 million USD. The capital investment is estimated at 899.0 million USD, forming about 89% of the total expenditures. The program expenditure is estimated at 432.9 million USD over the first period while it is estimated at 580.1 million USD over the second period.

## 8. CONCLUSIONS

It can be concluded that due to changes on the ground since the establishment of the PNA in 1994, it was required to reconsider the developmental framework in the transportation sector. The anticipated establishment of an independent Palestinian State motivated the preparation of the presented outline for a five-year transportation sector development plan. The plan aims at identifying the needed transportation activities and projects in the coming five years, and facilitating the presentation of a program to the international community for anticipated intervention responding to the sectoral needs.

The projects considered through the plan included those related to the repair, maintenance and rehabilitation of roads, the repair of damaged airport and seaport facilities, and the construction and development of new road and transportation facilities. Strategic transportation projects included the establishment and construction of a West Bank-Gaza Strip corridor, construction of border crossings, and development of a Master Transportation Plan. On the other hand, the program included the support and restructuring of the public and freight transportation systems. It also included institutional, legislative, and financial reform measures.

The program identified funding requirements for both capital and recurrent expenditure. The total program expenditure needs reached 1013 million USD. Capital investment needs were estimated at 899 million USD (89% of total), while recurrent expenditure needs were estimated at 114 million USD (11% of total).

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TABLE 1 Transportation Sector Expenditure Needs for the Coming Five Years (Million USD)

FIGURE 1 The existing transportation system in the West Bank and Gaza Strip.

**TABLE 1 Transportation Sector Expenditure Needs for the Coming Five Years (Million USD)**

<b>Sub-sector</b>	<b>First Period Priority Needs</b>	<b>Second Period Priority Needs</b>	<b>Total</b>
<b>Road Transportation</b>			
Routine and Periodic Maintenance	54.3	79.5	133.8
Rehabilitation and Upgrading	102.7	105.8	208.5
New Roads & West Bank- Gaza Corridor	43.2	114.8	158.0
Roads within Municipal/Village Boundaries	25.0	25.0	50.0
Agricultural Roads	5.2	10.5	15.7
Pedestrian & other Non-motorized Facilities	5.0	5.0	10.0
Border Crossings	14.0	10.0	24.0
<b>Air Transportation</b>	44.0	100.0	144.0
<b>Maritime Transportation</b>	42.5	42.5	85.0
<b>Public Transportation</b>	17.5	7.5	25.0
<b>Freight Transportation</b>	22.5	22.5	45.0
<b>Institution Building</b>	12.0	12.0	24.0
Studies and Miscellaneous	5.0	5.0	10.0
<b>Recurrent Expenditures</b>			
Ministry of Transportation	30.0	30.0	60.0
Ministry of Public Works and Housing	10.0	10.0	20.0
<b>Total</b>	<b>432.9</b>	<b>580.1</b>	<b>1013.0</b>

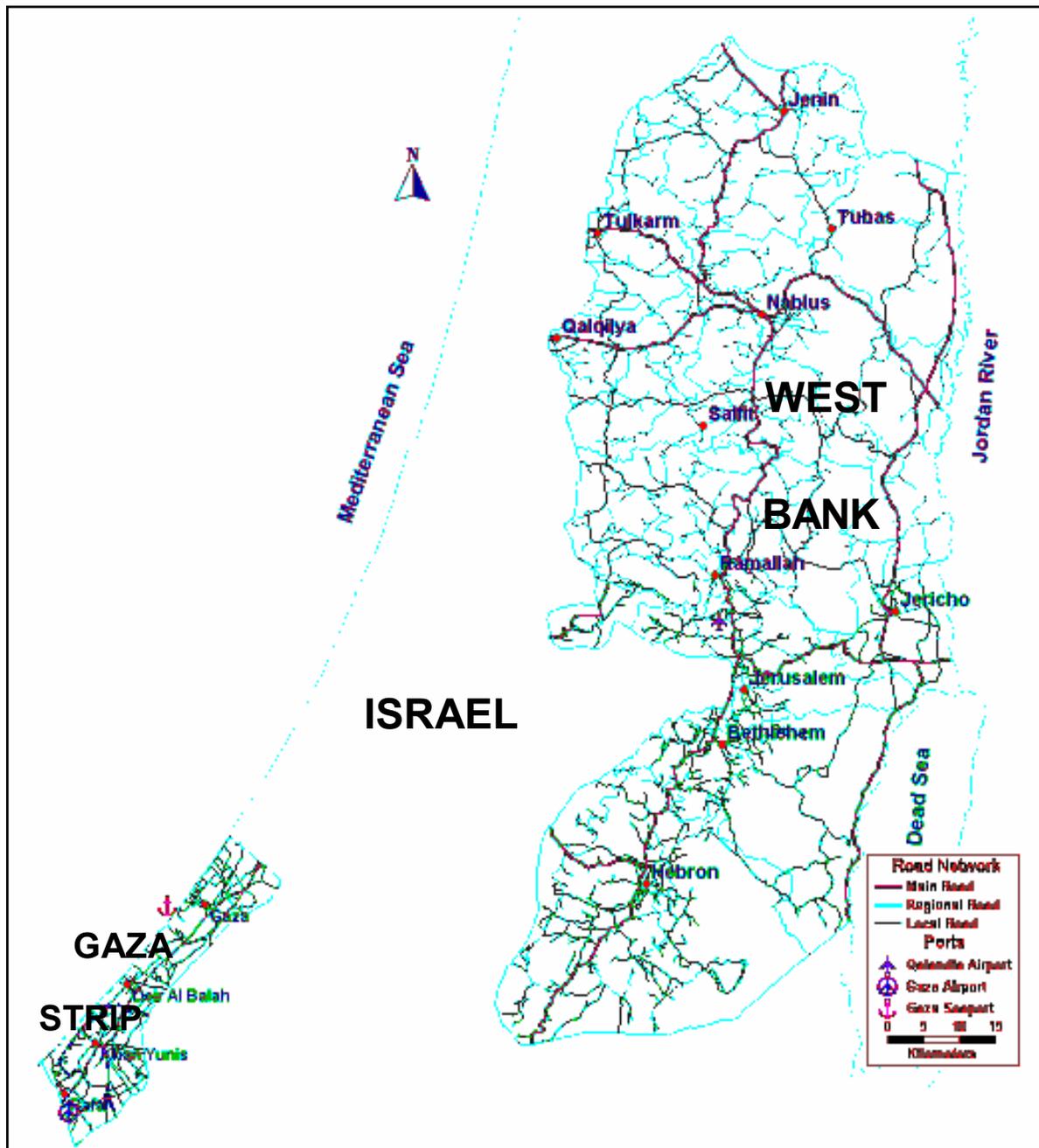


FIGURE 1 The existing transportation system in the West Bank and Gaza Strip.