

**Ministry of Planning and
Ministry of National Economy
Palestinian National Authority (PNA)
Japan International Cooperation Agency (JICA)**

No.

**Feasibility Study
on
Agro-industrial Park Development
in
the Jordan River Rift Valley**

Final Report

**Volume 1
(Main Report)**

May 2009

JAPAN INTERNATIONAL COOPERATION AGENCY

**KRI INTERNATIONAL CORP.
NIPPON KOEI CO., LTD.**

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LIST OF VOLUMES

Volume I Main Report

Volume II Reference Data and Materials of Engineering Study

Exchange Rate

USD1=NIS 3.6=JPY 108

as of September 2008

(unless otherwise specified)

PREFACE

In response to the request from the Palestinian National Authority, the Government of Japan decided to conduct “the Study on Agro Industrial Park Development in the Jordan River Valley” and entrusted the study to Japan International Cooperation Agency (JICA).

JICA dispatched a study team led by Mr. Munenori TADA, KRI International Corp. and consisted of KRI International Corp. and Nippon Koei Co., LTD. several times since the commencement of the study in April 2008.

The team held discussions with the officials concerned of the Palestinian National Authority and other parties concerned, and conducted field surveys. Upon returning to Japan, the team made further study of the findings and compiled this final report.

I hope that this report will contribute and be fully utilized at the implementation stage of the development.

Finally, I wish to express my sincere appreciation to those who participated in and cooperated to the study.

May 2009

Seiichi NAGATSUKA
Vice President
Japan International Cooperation Agency

May 2009

Mr. NAGATSUKA Seiichi
Deputy Vice President
Japan International Cooperation Agency (JICA)

LETTER OF TRANSMITTAL

Dear Sir,

We are pleased to submit to you the Final Report for “The Feasibility Study on Agro-industrial Park Development in the Jordan River Rift Valley (Phase II Study).

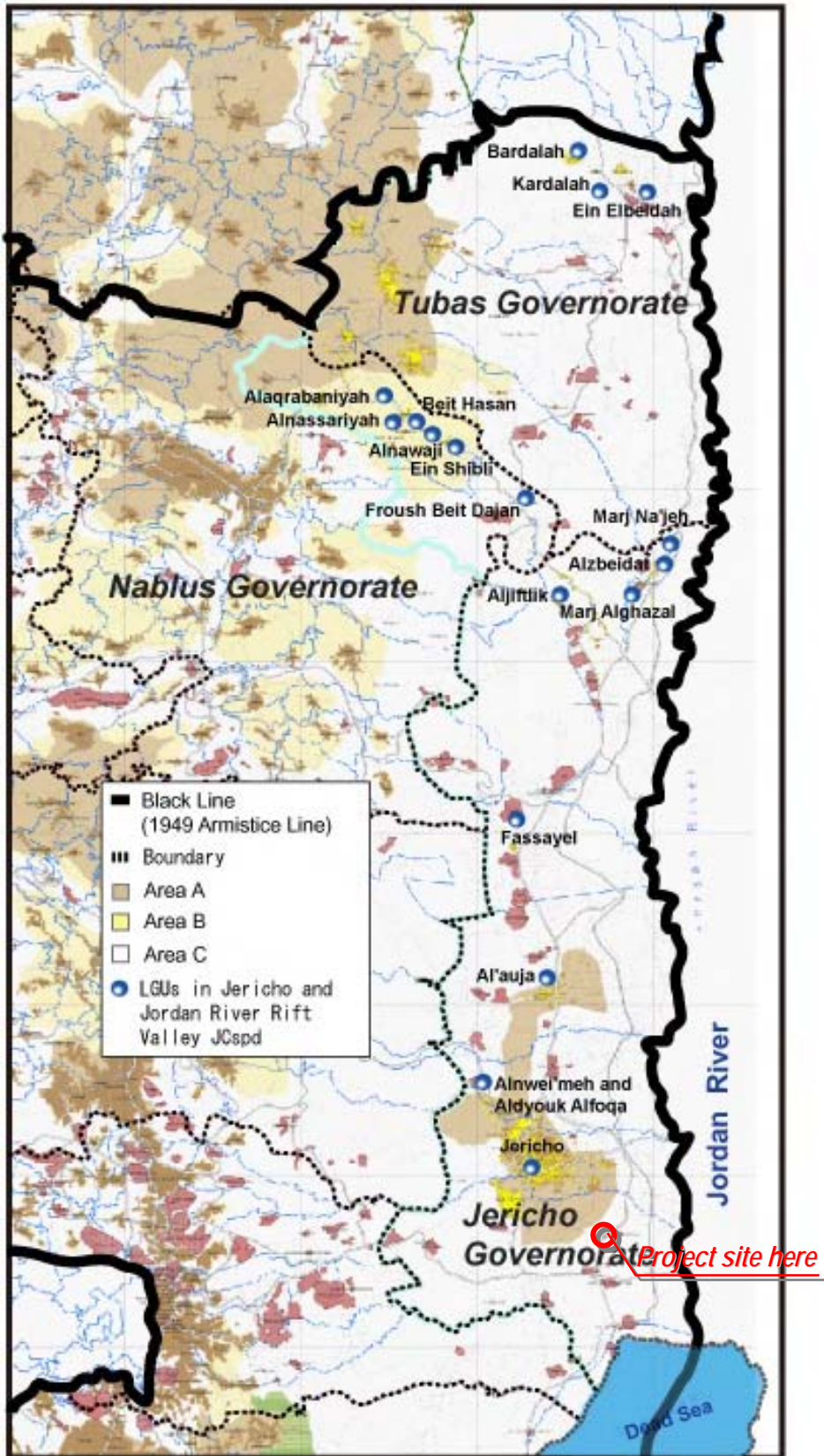
This Study has been conducted based on the results of the past study, i.e., Phase I, by the Study Team organized by KRI International Corp. and Nippon Koei Co., Ltd. during the period from April 2008 to November 2008, in collaboration with counterpart experts assigned by the Ministry of National Economy and Ministry of Planning of Palestine.

The objectives of the Study are to examine and elaborate the items required for full-scale feasibility study, covering such items as i) Agro-industrial Park development concept, ii) planning of land use and key facilities, iii) infrastructure development, iv) project cost estimate, v) economic and financial analysis, vi) social and environmental consideration, and vii) implementation and operation schemes. There were a series of discussions and exchange of views with the officials concerned of Palestinian National Authority and the private sector people of Palestine and its surrounding countries in the course of the Study, in order to provide down-to-earth options for planning and implementation of the Agro-industrial Park development.

The Study Team wishes to express its heartfelt gratitude for valuable assistance and cooperation received from the counterpart experts and public and private institutions during the execution of the field study in Palestine. The Final Report is the fruit of cooperation and collaboration of all the personnel that joined the Study.

Very truly yours,

TADA Munenori
Study Team Leader



Note: JICA Study Team arranged the map based on that originally prepared by OCHA

Study Area Map

EXECUTIVE SUMMARY

1. Introduction

The “Feasibility Study on Agro-industrial Park Development in the Jordan River Rift Valley” (hereinafter referred to as “the Study”) consists of Phase I and Phase II Studies based on the time table as shown in Figure 1. Phase I Study was implemented as a pre-feasibility level study during the period from March 2007 to August 2007, and Phase II Study was implemented as a full-scale feasibility study from December 2007 to November 2008.

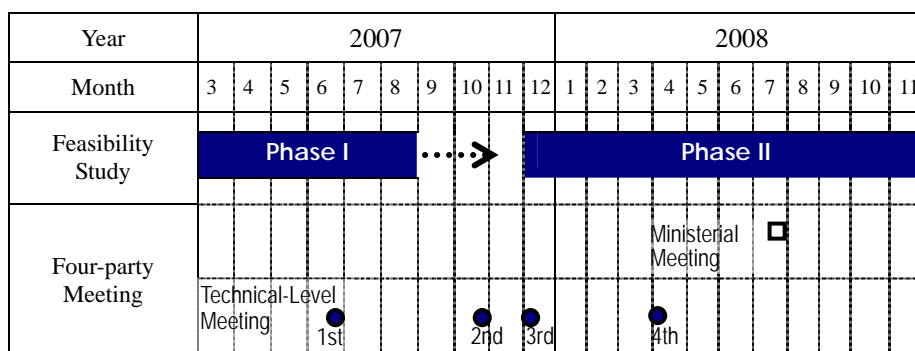


Figure 1 Implementation Period of the Feasibility Study

Phase I Study focused on the following works:

- a) Industrial sector study
- b) Investment environment
- c) Industrial development strategy
- d) Industrial park development

Phase I study concluded that the Agro-industrial Park development would be a significant project to fulfill its intended mission, in line with the Japanese initiative for the “Corridor for Peace and Prosperity”.

During the course of the Phase I study, an inter-regional consultation platform called the Four-Party Consultative Unit was formed with the participation of the Palestinian National Authority (PNA), Israel, Jordan and Japan for the purpose of promoting confidence-building through economic cooperation. The first technical level meeting was held on 27 June 2007, where regional cooperation issues were discussed.

The second technical level meeting was held on 25 October 2007, after the Phase I study. Concrete steps forward were marked, reaching an agreement regarding the site selection.

- The candidate site for the Agro-industrial Park covers 111.5 ha, and is next to an existing steel factory in the southern fringe of Jericho Municipality. The site consists of Areas A (61.5 ha) and C (50 ha). Construction of the Agro-industrial Park will start in Area A while further expansion in Area C would be subject to further discussion.

It was announced during the third technical level meeting held on 3 December 2007 that Phase II study, a

full-scale feasibility study, should be immediately carried out as shown in Figure 2.

Year	'07	2008											
Month	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Feasibility Study		Part 1			Part 2			Part 3					
Four-party Meeting	Ministerial Meeting							□					
	● Technical-Level Meeting 3rd				● 4th								

Figure 2 Time Table of the Phase II Study

Phase II study consisting of three parts was implemented from December 2007 to November 2008. The Study Part 1 concluded that “stage-wise development approach” is taken as development scenario for successful implementation of the Agro-industrial Park. The Study Part 2 presented the development planning of the Agro-industrial Park, engineering study and organizational arrangement for implementation with industrial and investment promotion. The Study Part 3, the last stage of the full scale of feasibility study, focused on business schemes of the Agro-industrial Park and its financial viability.

2. Development planning for the Agro-industrial Park

2.1 Basic Principles

It is expected that the Agro-industrial Park will be vital for the economic upgrading of the Jordan River Rift Valley (JRRV), which will contribute to challenging future goals, i.e. “improvement in agriculture”, “promotion of agro-industry” and “enhancement of export competitiveness of Palestinian export industries”.

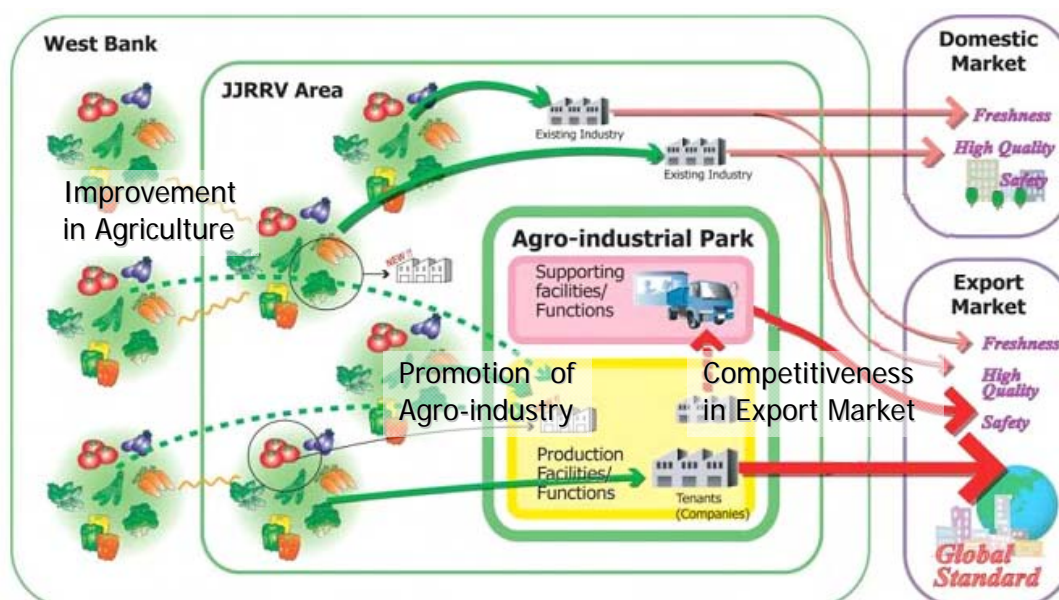


Figure 3 Schematic Image of the Future JRRV

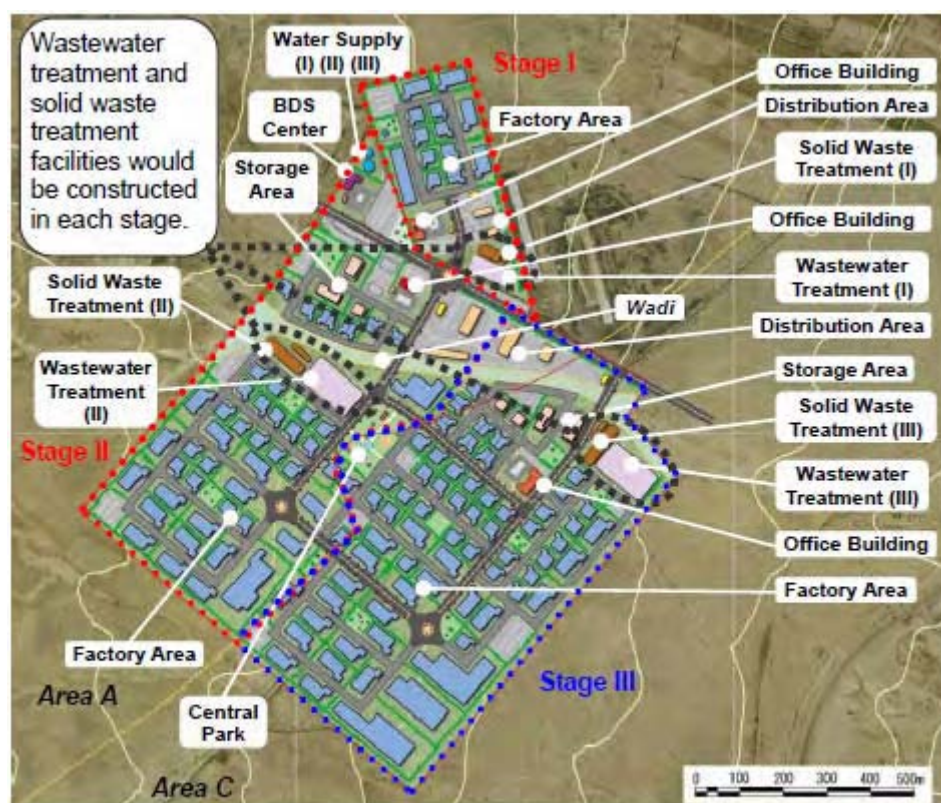
The Agro-industrial Park will put its priority on business dealing with high value-added fresh fruits and vegetables, and food processing industry, which have comparative advantages in quality. Export promotion of priority industries will be the important mission of the Agro-industrial Park development. Both European

countries and the Gulf States would be the promising export markets for processed foods and fresh fruits and vegetables.

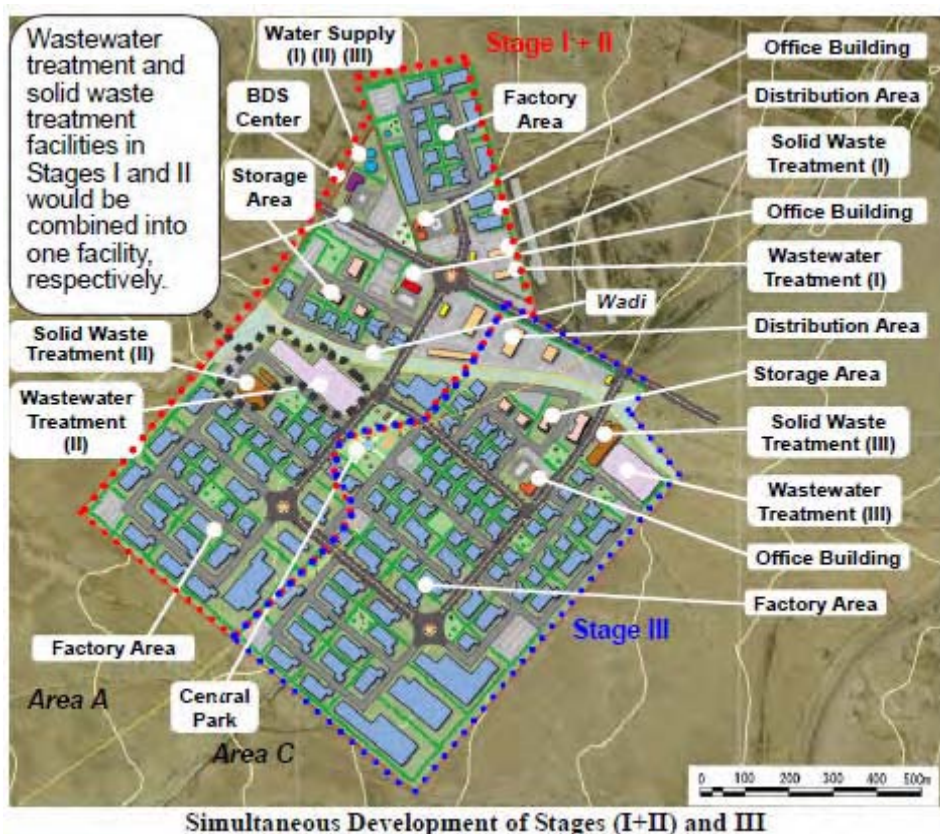
2.2 Development Plan

The candidate site is located at the southern fringe of Jericho Municipality and comprised three land parcels namely, Lot I (11.5 ha) and Lot II (50 ha) in Area A, and Lot III (50 ha) in Area C. Lot I is a state-owned land while Lots II and III are privately-owned.

The stage-wise development is scheduled to commence in 2009, starting from a relatively small scale development in Lot I (stage I), and subsequently in Lot II (stage II) on the condition that the PNA surely owns the land or secures the guarantee of land use. The simultaneous development of Lots I and II will be possible if investment demands for these seem sufficient, and if the PNA's land use for Lot II site is secured. The land use plans based on a stage-wise development, as well as the case of simultaneously developing these lots are illustrated below.



Stage-wise Development of Stages I, II and III



Source: JICA Study Team

Figure 4 Land Use Plans

The Agro-industrial Park is planned to provide land for factories, distribution/storage facilities, infrastructure facilities, office buildings and the Business Development Service (BDS) Center. The BDS Center would function as a business supporting facility to tenant enterprises. The type of industries and the land size allotted for factories are shown below.

Table 1 Number of Tenants by the Type of Industries and the Land Size (recommended plan)

Priority Industries		Area in the land use plan	Number of tenants according to development stage					Ratio of number of factories
			I	II	I+II	III	I+II+III	
a)	Business dealing with fresh vegetables and fruit		1	2	3	4	7	5%
b)	Food processing industries	Factory area	12	45	57	66	123	90%
c)	Supporting services		1	2	3	4	7	5%
Sub-total			14	49	63	74	137	100%
d)	Logistics and transportation	Distribution area	1	7	8	7	15	
e)	Trading service	Office building	1	1	2	1	3	
Total			16	57	73	82	155	
Land size per factory (floor area is 50% of Lot size per factory)	~0.25 ha/factory		2	8	10	12	22	15%
	0.25 ha/factory		7	24	31	36	67	50%
	0.5 ha/factory		4	15	19	23	42	30%
	0.5 ha~/factory		1	2	3	3	6	5%
Total			14	49	63	74	137	

Source: JICA Study Team

The planned infrastructure is largely divided into two categories; the off-site infrastructure and the on-site infrastructure. The on-site and off-site infrastructures shall be basically developed through the private developer's initiative and public initiative. On-site developer could be public entity depending on the decision by PNA, given the fact that financial viability of on-site development by a private developer seems low as analyzed in this report. The facilities which are public in nature such as the wastewater treatment facilities, solid waste treatment facilities and BDS Center shall be considered as off-site infrastructures even if these shall be located inside the Agro-industrial Park. The demarcation of these two infrastructure categories is shown below.

Table 2 Demarcation of Required Infrastructure

	Category	Off-site Infrastructure	On-site Infrastructure
1	Land reclamation	-	Excavation and embankment, and <i>Wadi</i> improvement
2	Road	Access road	Internal road network
3	Power supply facilities	Transmission line from the New Dead Sea substation	Internal distribution line network with transformer
4	Telecommunication facilities	Transmission line from closest telecommunication facility	Distribution line network
5	Water supply facilities	Transmission pipeline from water sources and water treatment facility	Water supply tank and internal distribution pipeline network
6	Wastewater treatment facilities	Wastewater treatment facilities	Collection pipeline network of wastewater, and the redistribution pipeline network of reclaimed water
7	Solid waste treatment facilities	Solid waste treatment facilities	Vehicles for solid waste management
8	Security facilities	-	Site security systems
9	Building	BDS Center building	Rental factories, office buildings
10	Logistics/Green/Open Space	-	Distribution area, storage area, parking area, green zone and park

Source: JICA Study Team

2.3 Values of the Agro-industrial Park

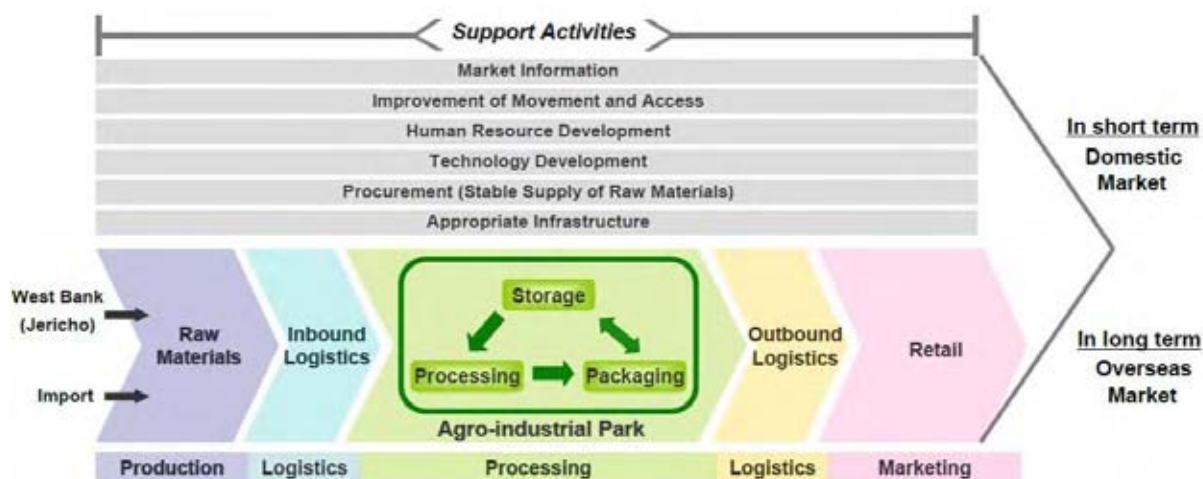
The planned Agro-industrial Park is expected to play the role as a "production base" in the JRRV as well as an export terminal to Jordan and other Gulf countries. However, in order to achieve the future goals in the JRRV, i.e., improvement in agriculture, promotion of agro-industry and enhancement of export competitiveness of Palestinian export industries, specific support activities should be included in the functions of the Agro-industrial Park.

The following support activities of the Agro-industrial Park would contribute to the enhancement of its values as a production base for the agro-industry as well as an export terminal to overseas market.

- a) Provision of appropriate infrastructure to tenant enterprises
- b) Joint procurement of raw materials to decrease the procurement cost
- c) Collective shipment of products from the Agro-industrial Park to allow for cost-efficient transport of tenant enterprises
- d) Implementation of technical assistance for upgrading technologies and developing products
- e) Completion of all production process, i.e. processing, packaging and storing inside the Agro-industrial Park

- f) Provision of common facilities such as warehouse and distribution center
- g) Provision of appropriate trainings on human resource development for tenant enterprises
- h) Facilitation of movement and access in the Agro-industrial Park such as those for commuting workers and cargo transportation.
- i) Provision of overseas market information considering seasonal advantage of agricultural products in JRRV

The following figure illustrates the necessary support activities for the Agro-industrial Park in terms of establishment of value chain for the agro-industry.



Source: JICA Study Team

Figure 5 Value Chain for the Agro-industry with the Establishment of the Agro-industrial Park

2.4 Implementation Method

The Palestinian Industrial Estates and Free Zone Authority (PIEFZA) is responsible for industrial estate development in Palestine. The primal missions of PIEFZA are i) policy formulation for industrial estates and free zones development, ii) provision of administrative services called one-stop shop, iii) engage in contract administration such as selection of developer and tendering, and iv) monitoring of operation of industrial estates. The Palestinian Industrial Estates and Free Zones Law (PIEFZL) stipulates two methods of industrial estate development, i.e. public initiative and private initiative. Public initiative means that a public institution will act as a developer while a private initiative means that a private developer will be responsible for on-site development and management. The latter is deemed as the usual case where PIEFZA would invite a private developer in the form of development concession under its administrative control and supervision. The Gaza Industrial Estate (GIE), the only completed case under PIEFZA, was implemented on a concession scheme.

2.5 Economic Effects

The planned Agro-industrial Park would bring about economic effects, i.e. incremental added value, contributing to Palestinian economy and employment creation. It is estimated that up to stage II, the added value to be generated inside the Agro-industrial Park would be about USD 18.7 million per year while

direct employment opportunities, i.e. hiring of factory workers, would benefit about 1,700 persons. The following table shows the estimated added values and employment creation inside the Agro-industrial Park.

Table 3 Added Values and Employment Creation inside the Agro-industrial Park

	Stage I	Stages I+ II	Stages I+II+ III
Added value (USD 1,000/year)	3,800	18,700	41,600
Employment (persons) ¹	340	1,700	3,790

Source: JICA Study Team

2.6 Social and Environmental Consideration

During the execution of the Study Part 2 (Phase II), the first stakeholders' meeting was held on 10 June 2008 for the preparation of the EIA in accordance with the environmental assessment guidelines. The group discussions covered a wide range of subjects related to wastewater treatment, solid waste management, quantity and quality of water, and anticipated negative environmental impacts possibly caused by the project implementation. Consequently, the JICA Study Team (JST) started preparation of the EIA report. In the course of the Part 3 the second stakeholders meeting was held on 15 October 2008 in order to present the results of the EIA. The core components of the EIA are i) analysis of alternative plans, ii) potential environmental and social impacts and mitigation measures, and iii) environmental monitoring plans.

The analysis of alternative plans focuses on the development options of on-site and off-site infrastructures, including access roads, water supply, wastewater treatment and solid waste management. Then, the EIA encompasses mitigation measures for the pre-construction, construction and operation stages. Environmental monitoring plan was also prepared comprising of parameters, schedule, frequency to be monitored, and stakeholders' responsibilities in monitoring².

2.7 Movement and Access

The Agro-industrial Park will be a core production and business center, which would generate daily movement of 2,370 factory workers and 260 trucks³ to and from the Agro-industrial Park in stage II. Smooth movement and access of goods and people will be vital for the efficient operation of tenant enterprises and industries.

As for the transportation of people working in the Agro-industrial Park, it is planned to provide transportation services for employees commuting from remote areas. Such services will require vehicles and drivers registered at security authority in order to avoid unnecessary disturbances at checkpoints. As for the cargoes of tenant enterprises in the Agro-industrial Park, appropriate facilitation should be considered and provided to the tenant enterprises. According to the interview survey of Palestinian companies conducted during the Part 1, the following risks were identified concerning transportation to the

¹ The number of employees inside the Agro-industrial Park as an additional direct employment (3,790) is calculated by multiplying the number of factories' employees by tenant occupancy ratio (90%) and incremental job creation ratio (80%). Direct employment in the Agro-industrial Park would include employees working in the tenant factories, but not includes workers and employees in distribution center, BDS Center, and office building.

² The outline of the EIA is presented in II-4 of the Chapter II.

³ Inbound transportation for raw materials/equipment and outbound transportation for the products including export cargoes.

Agro-industrial Park:

- a) Delay in deliveries
- b) Unpredictability of deliveries
- c) High transportation costs
- d) Damaged raw materials and products due to the back to back checkpoint system

To alleviate the above risks, the following measures should be extended to the cargoes of the tenant enterprises:

- a) Advance notification of information to checkpoints (driver's ID, car number and date/time of arrival of cargoes)
- b) Joint procurement of fuel and equipment used by tenant enterprises and
- c) Use of known/trusted delivery service companies for cargo transportation

These measures would contribute to smooth passage of inbound goods through checkpoints. Outbound cargoes for export utilize the Allenby Bridge Terminal or other commercial terminals such as the Bardaleh Terminal (main products passing through this terminal are fresh vegetables and fruits) located in the northern Jordan Valley. The Allenby Bridge Terminal has already initiated facilitation of smooth passage and advance notification system (24 hours advance notice) for all commercial vehicles. However, if other commercial terminals are opted, use of Israel delivery service companies, sought by many Palestinian companies, is a commonly applied method to allow smooth passage of outbound cargoes under the existing situation.

The issue on movement and access concerning the nearby checkpoints was discussed at the headquarters of COGAT during the Study Part 1. The discussion focused on i) reduction of passage time of outbound cargoes through the Mousa Alami Gate to the Allenby Bridge, ii) security system in case of A-2 Access Road, and iii) security system inside the Agro-industrial Park.

There are two checkpoints in Jericho, i.e. Jericho DCL checkpoint and the Musa Alami Gate near the Agro-industrial Park. These are not commercial terminals, and hence, smooth passage of cargoes through both checkpoints will have to be taken into account as inbound and outbound traffic increase. The Jericho DCL checkpoint currently allows inbound transportation to enter Jericho City from outside, while commercial vehicles can not leave through the same checkpoint upon their return unless the drivers hold East Jerusalem and Jericho IDs. These would require i) facilitation of commercial vehicles for smooth passage and ii) permission for outbound commercial vehicles to cross the Jericho DCL checkpoint. Meanwhile, the Musa Alami Gate has currently two lanes for incoming and outgoing passages. A long queue of vehicles waiting to pass through the outbound lane has been observed especially during summer. It would be an incentive for the tenant enterprises if outbound cargo transportation from the Agro-industrial Park will be allowed to use the incoming lane flexibly (traffic counterflow system) during traffic congestion period in summer.

3. Engineering Study

3.1 Conditions of Candidate Site

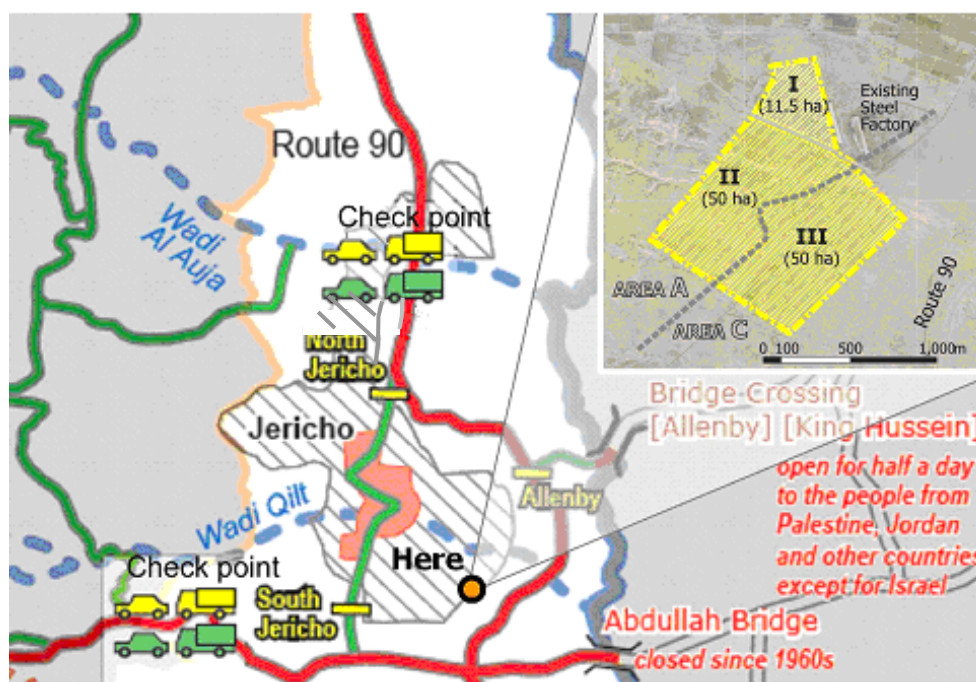
The candidate site located in the southern fringe of the Jericho Municipality, about 4.5 km from the city center, consists of a state-owned land (Lot I) and privately-owned lands (Lots II and III). The profile of the land parcels is shown in Table 4.

Table 4 Profile of Land Parcels

Lot No.	Area	Jurisdiction	Ownership
I	11.5 ha	Area A	State-owned land (PNA)
II	approx. 50.0 ha	Area A	Privately-owned land (Al Hussein Family)
III	approx. 50.0 ha	Area C	Privately-owned land (Al Hussein Family)
Total	111.5 ha		

Note: Based on the information from Ministry of National Planning. Lot number designation of I, II and III is tentative.
Source: JICA Study Team

The elevation of the candidate site ranges from -288 m to -313 m. In the privately-owned land, a *Wadi* (dried up river) flows from west to east.



Source: JICA Study Team

Figure 6 Location of the Candidate Site

The candidate site has a predominantly Mediterranean climate which prevails in and around the Jericho area. Annual rainfall at said area reaches lower than 200 mm. Rainfall occurs between October and May while it rarely rains in the summer season from June to September. The monthly rainfall in Jericho is less than the monthly evaporation throughout the year.

Table 5 Annual Monthly Air Temperature, Rainfall and Evaporation in Jericho

Item	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Air Temperature (°C)	13.2	14.6	17.4	21.7	25.6	28.5	29.9	30	28.6	25.1	19.6	14.7	22.4
Rainfall (mm)	36	31	25	10	2	0	0	0	0	7	22	33	166
Evaporation (mm)	78	76	128	189	261	289	298	267	227	135	94	59	2,101

Source: Meteorological Office, the Ministry of Transport

3.2 Expected Scale of the Agro-industrial Park

The land use plan of the Agro-industrial Park is prepared consistently with the basic concept on land use as mentioned in section 2.2, as well as the following assumptions:

- The building coverage of the factory is assumed to be 50% based on standard factory area in the Jericho Municipality.
- Factories and distribution facilities would be one-story buildings.
- Office buildings would be of three-story structure.
- Storage area is estimated based on the required storage volume, which is calculated on the basis of distribution and production volume.

The planned land use area is shown below.

Table 6 Planned Land Use Area

UNIT: m²

Item	Lot I	Lot II	Sub-total (I+II)	Lot III	Total (I+II+III)
Factory area	47,590	189,140	236,730	289,720	526,450
Office building area	12,760	10,000	22,760	9,940	32,700
BDS Center	0	8,990	8,990	0	8,990
Distribution area	14,330	24,070	38,400	22,150	60,550
Storage area		13,220	13,220	17,170	30,390
Park area	1,880	18,750	20,630	25,440	46,070
Common utility area	12,890	29,500	42,390	21,260	63,650
Parking area	4,100	16,290	20,390	19,890	40,280
Bus station/Security area	0	12,890	12,890	0	12,890
Internal road	14,370	69,470	83,840	95,930	179,770
Access road	0	17,950	17,950	2,090	20,040
Area required for <i>Wadi</i> Improvement ⁴	0	27,670	27,670	10,890	38,560
Sloped land due to land reclamation ⁵	7,080	20,010	27,090	27,570	54,660
Unused area	0	42,050	42,050	0	0
Total	115,000	500,000	615,000	500,000	1,115,000

Source: JICA Study Team

The land use area planned for each development stage (I, II and III) and simultaneous development (I+II+III) is assumed to be the same. The number of employees in the Agro-industrial Park is estimated as shown below.

Table 7 Estimated Number of Employees

Unit: person

Facility	Stage I	Stage II	Sub-total (I+II)	Stage III	Total (I+II+III)
Factories	480	1,890	2,370	2,890	5,260
Distribution facilities	130	500	630	770	1,400
Office Building	80	100	180	100	280
BDS Center	10	20	30	0	30
Supporting Staff	10	10	20	10	30
Total	710	2,520	3,230	3,770	7,000

Note: Employees of the BDS center working in the office building in stage I would move to the exclusive BDS center building which is scheduled to be completed in stage II.

Source: JICA Study Team

⁴ The existing alignment of *Wadi* would be modified into the artificial canal with a sufficient capacity of water flow.

⁵ Due to land reclamation works, the sloped land would be created at the boundary of areas with each elevation.

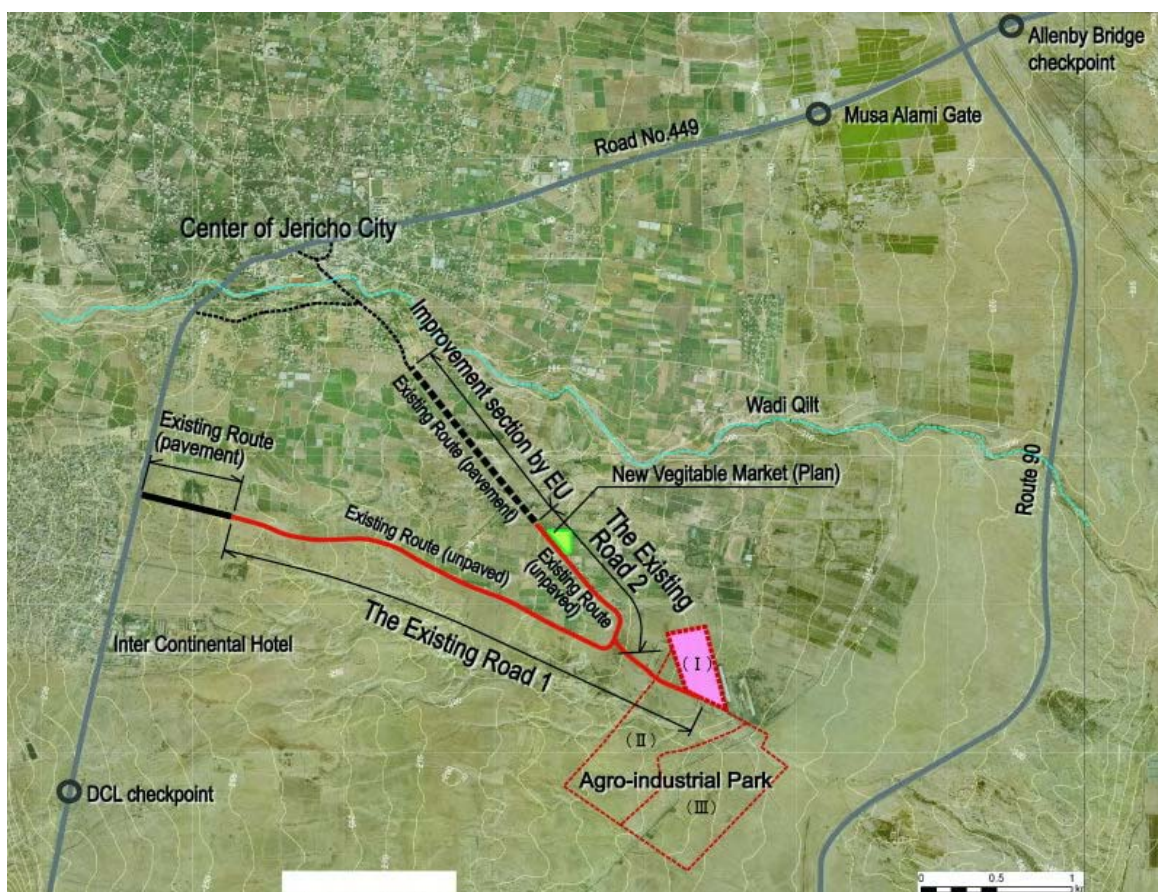
3.3 Off-site Infrastructure and Facility Planning

On the basis of function and facilities required for the Agro-industrial Park, off-site infrastructure is planned as described below.

Roads

The daily traffic volume to and from the Agro-industrial Park is estimated to be 575 vehicles in stage I and 2,730 vehicles in stage II.

The existing Road 1 leading to the Jericho Regional Hospital westward, and the existing Road 2 from its junction with Road 1 leading to the new vegetable and fruits market, are both unpaved as indicated in Figure 7. These roads need to be improved (paved) to facilitate transportation of inbound and outbound raw materials and products, and commuting of employees. The improvement of these existing roads are tentatively set for 10 m width for stage I and 20 m width for stage II, subject to different specifications and alignment, including the bridge over the *Wadi* for stage II.



Source: JICA Study Team

Figure 7 Road Improvement for Stage I

The following access road alternatives for stages II and III are shown in Figure 8.

- Access Road A-1 (a new road linking the north of the Agro-industrial Park to Route 449)
- Access Road A-2 (a new road merging with Route 90)

Both alternative roads would serve mainly the outbound transportation of the final products.

Access Road A-1 heading north to Route 449 would require land acquisition of the agricultural field and a part of the residential area. Access Road A-2 meanwhile is located in Area C where relocation of residents is not required for land acquisition. Access Road A-2 is considered to be more technically and financially feasible than Access Road A-1.

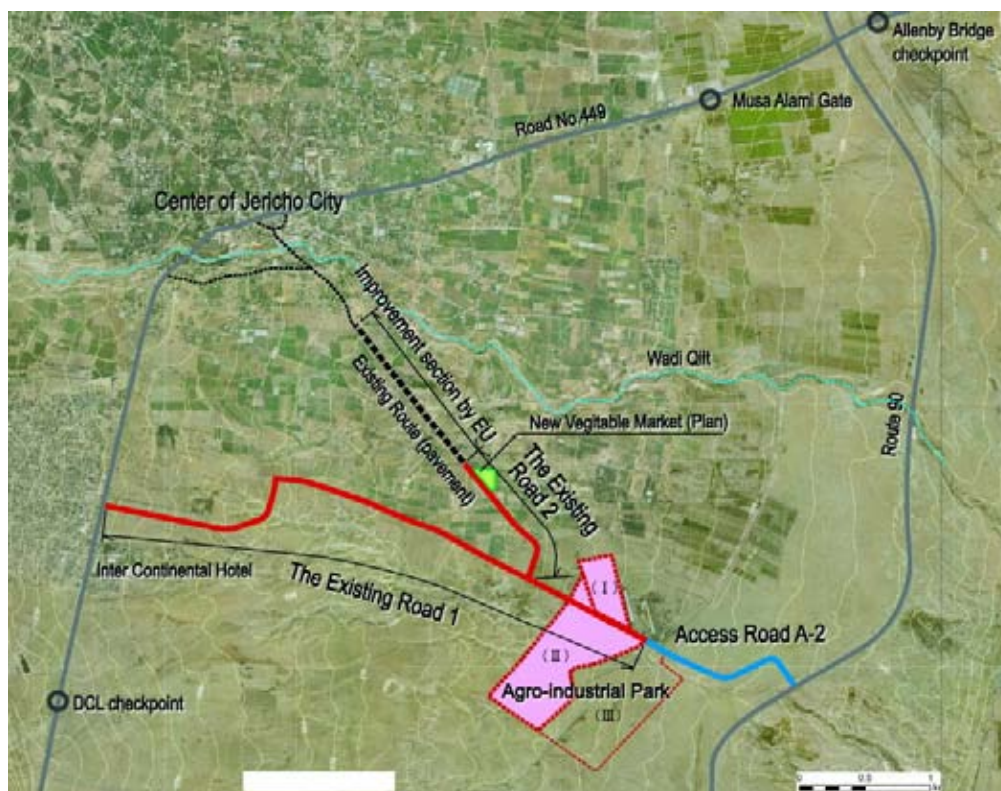


Source: JICA Study Team

Figure 8 Alternative Routes of Access Road for the Agro-industrial Park

Improvement of the existing roads and the construction of Access Road A-2 are shown in Figure 9.⁶

⁶ The proposed road specifications and alignment of improvement of the existing roads 1 and 2 for Stage II are different from those of Stage I. Required specifications and alignment are subject to further discussions with Jericho Municipality and the PNA in light of the Jericho Master Plan and the development plan of the Agro-industrial Park.



Source: JICA Study Team

Figure 9 Improvement of the Existing Roads and Construction of Access Road A-2

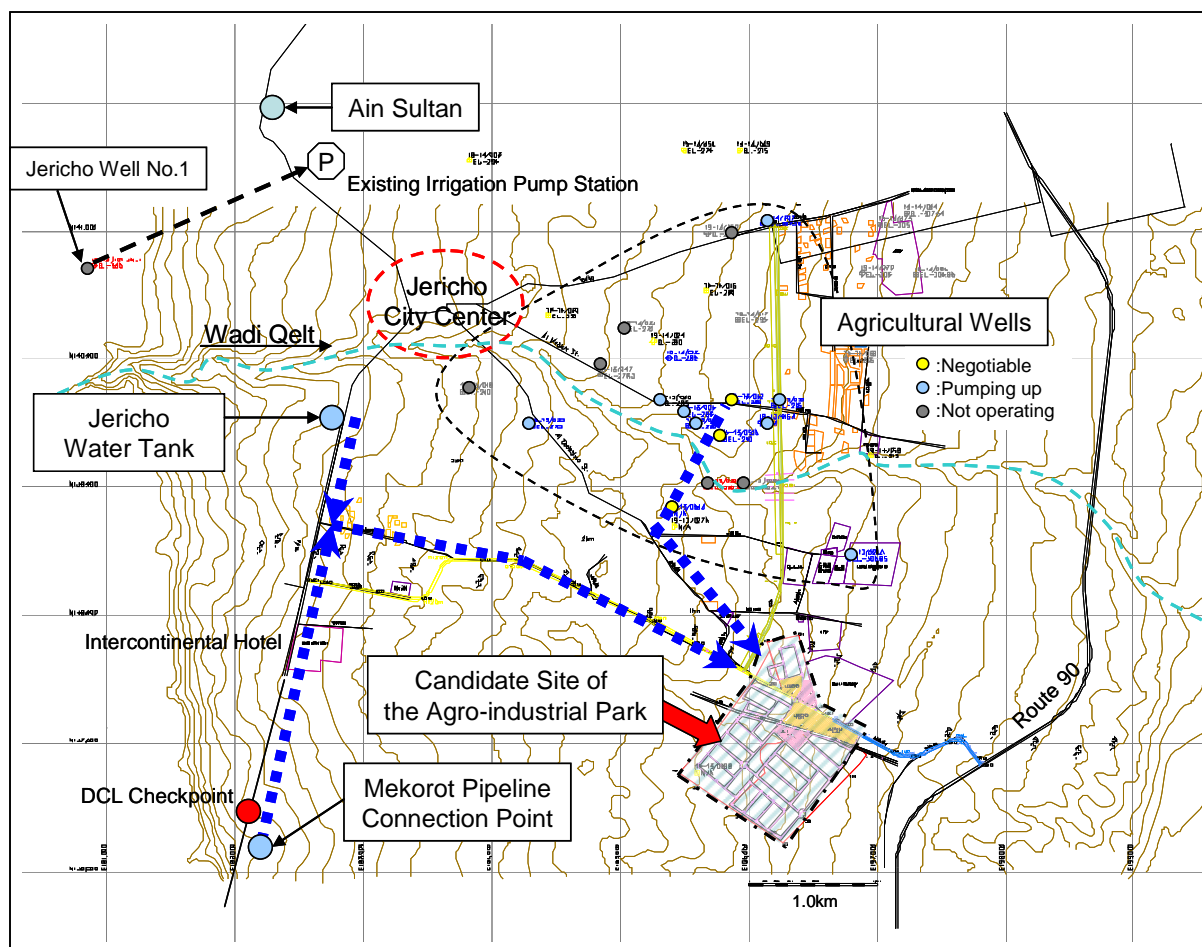
Power supply

The present power supply capacity in Jericho is 45 MW in total, which is sufficient for the power demand of the Agro-industrial Park (2.5 MW in stage I and 12.5 MW in stage II). Jerusalem District Electric Company (JDECO) has started the construction work of a new power station by the end of 2008, which is located approximately 4 km from the Agro-industrial Park. A new 33 kV line would be installed to supply power from the new station to the Agro-industrial Park.

Water supply

Water supply is one of the critical issues for the Agro-industrial Park development. Daily average water demand of the park is estimated to be 274 m³/day in stage I and 1,096 m³/day in stage II. Water quality required for food processing and production is equivalent to that for drinking water, as specified in “Second Modified Draft of Drinking Water Quality Guidelines” published by PSI in December 2004. Appropriate water sources for the Agro-industrial Park to meet corresponding demands for each development stage are as follows:

- Water supply system of the Jericho Municipality for stage I
- Existing agricultural wells surrounding the Agro-industrial Park (three wells) for stage II
- Water source from Mekorot of Israel for stage III and backup for stages I and II



Source: JICA Study Team

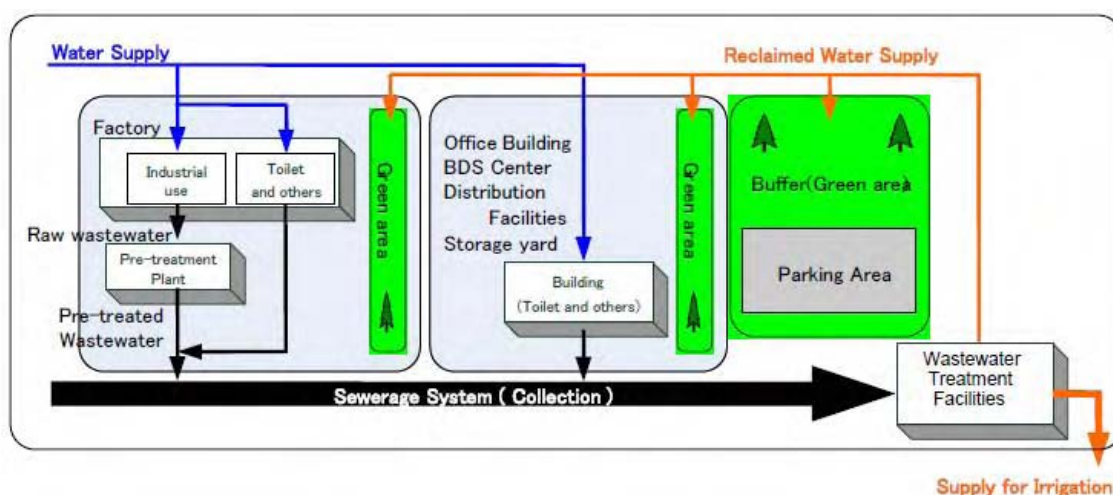
Figure 10 Locations of Alternative Water Source for the Agro-industrial Park

Daily water supply volume from the existing Jericho water tank to the Agro-industrial Park is planned to be 320 m³/day for stage I, considering the water losses through the transmission pipelines. Meanwhile Palestinian Water Authority (PWA) intends to rehabilitate the existing Jericho Well No. 1. Brackish water from this well is planned to be mixed with pure water from Ain-Sultan at the existing irrigation pump station for irrigation use. Jericho Municipality confirmed that it would be possible to supply pure water from Ain-Sultan to the Agro-industrial Park during stage I, with a quantity of 280 m³/day, provided that rehabilitation of the Jericho Well No 1 and construction of pipeline to the existing irrigation pump station is implemented. This issue shall be discussed and coordinated further with Jericho Municipality.

Water quality and quantity survey for three agricultural wells and Jericho Well No 1 was conducted during the Part 2 of the Phase II study. Water quality in three agricultural wells was identified not suitable for drinking due to high concentration of potassium (K) and chloride (Cl). Desalination treatment will be required for the water sourced from these three wells. Daily water volume from these wells will supply about 1,545 m³/day to the Agro-industrial Park. Water quality of Jericho Well No 1 was also identified not suitable for drinking water because of high levels of bacteria. Hence, chlorine sterilization treatment will be required for the water sourced from said.

Wastewater Treatment Facility

Wastewater treatment is planned with two steps, i.e. pre-treatment by each tenant factory, then final treatment in wastewater treatment facilities. Wastewater is expected to contain high concentration of chlorine, BOD, SS, oil and acetic acid from factories processing food such as milk, meat and pickles. The following figure shows schematic the flow of wastewater treatment from pre-treatment to wastewater treatment facilities through sewerage collection system. Treated wastewater shall be reused as reclaimed water to sprinkle the greens and park areas, and to supply the dates plantation surrounding the Agro-industrial Park.



Source: JICA Study Team

Figure 11 Schematic Flow of Wastewater Treatment in the Agro-industrial Park

The following table shows the design parameters of influent quality to the wastewater treatment facilities (before treatment) and effluent quality from the wastewater treatment facilities (after treatment).

Table 8 Design Parameters of Wastewater Treatment Facilities

Major Parameter	Influent Quality (before treatment)	Effluent Quality (after treatment)
BOD ₅	650 mg/L	20 mg/L
TSS	650 mg/L	30 mg/L
T-N	80 mg/L	25 mg/L
Fecal coli	—	200MPN/100mL

Source: JICA Study Team

The oxidation ditch process is recommendable to adopt for the wastewater treatment facilities of the Agro-industrial Park due to i) less odor emitted, ii) less influence caused by fluctuation of influent quantity, and iii) simple operation and maintenance. Wastewater treatment capacity is estimated to be 470 m³/day in stage I and 1,650 m³/day in stage II. Hence, simultaneous development of stages I and II would need wastewater treatment facilities with a combined capacity of about 2,120 m³/day.

Solid Waste Treatment Facilities

Solid waste generated in the Agro-industrial Park is likely divided into the four types: i) recyclables such as paper, glass, metal and plastics, ii) food processing waste, iii) wood from pallets for transport products, and

iv) dewatered sludge generated in the wastewater treatment facility. Inside the Agro-industrial Park, each type of waste shall be segregated and put in respective containers provided by tenant enterprises. Especially, food processing waste is diverted to compost through several processes. Outside the Agro-industrial Park, recyclables are sold, while sludge and other wastes are transported to a designated landfill site.

3.4 On-site Infrastructure and Facilities Planning

On the basis of function and facilities required for the Agro-industrial Park, on-site infrastructure is planned as described below.

Land reclamation

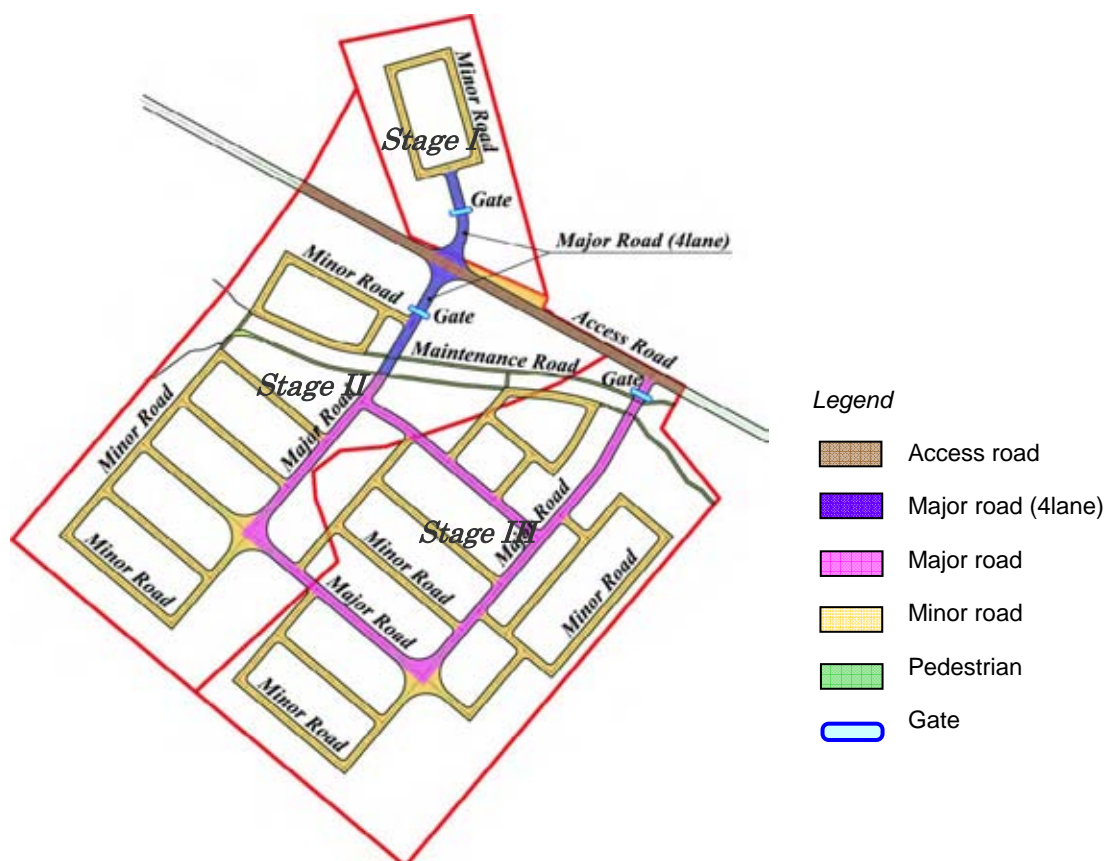
Soil condition in the candidate site varies and consists mainly of sandy soils with minimal moisture content. During the Part 2, soil sampling and core drilling tests were conducted, consequently confirming that the candidate site has a sufficient bearing capacity for foundations suitable to normal building structures. The preliminary planning for land reclamation was conducted using the available topographic data with 0.5 m interval contour lines. It was confirmed that excavation volume is sufficient for embankment in Lots I and II. The excavation volumes for stages I and II are 48,000 m³ and 550,000 m³, respectively.

Wadi improvement

Improvement of *Wadi* crossing the central part of the candidate site from the west to east direction was planned with respect to its alignment, channel width, channel depth and protection works. Probable flood of 55 m³/s once in 50 years is adopted as design discharge for the *Wadi* improvement, in view of safety. Protection works are designed to prevent partial erosion at both river sides, downstream of bridges, and inlet and outlet portion of the area of each construction stage. The design considers the sandy clay condition of the area which is weak against erosion due to water flow.

Internal roads

In order to attain smooth daily traffic flow (2,730 vehicles/day) inside the Agro-industrial Park in stage II, internal road network was designed according to the classification of major and minor roads. Major roads are supposed to enhance mobility while minor roads maximize accessibility to each factory. Access road to the Agro-industrial Park is directly connected to major roads in order to ensure security control. At each stage, three gates are provided along the major roads. The following figure shows internal road network encompassing major roads (four and two lanes), minor roads (two lanes) and maintenance roads along the *Wadi*, for inspection purposes.



Source: JICA Study Team

Figure 12 Planned Network of Internal Road

Storm water drainage channel

Despite the relatively small rainfall in Jericho, storm water drainage channel is planned to discharge storm water into the *Wadi*. Storm water inside the Agro-industrial Park is planned to be collected into roadside ditch along the internal road, and then released into the *Wadi*. Pipe culverts are installed at sections where provision of road side ditch is difficult.

Power distribution lines

Overhead power distribution lines (33 kV) from the new Dead Sea power station would be extended to each tenant enterprise inside the Agro-industrial Park. Installation of step down transformers to convert 33 kV to 400 V will be planned for small and medium power consumers, while 33 kV line will be directly extended to big power consumers.

Water distribution lines

Water distribution facilities consist of water supply tank and distribution pipelines. Storage capacity of water tank was designed, taking into account the hourly water demand fluctuation, necessary water amount for fire fighting and emergency (cut-off of water supply) situations. Diameter of water distribution pipes was designed to accommodate the required hourly maximum water consumption.

Wastewater and solid waste collection system

The wastewater collection facilities are planned to collect pre-treated effluent from each factory, and sewage from other facility, in accordance with the following basic concepts:

- Separate system, which is a system for transporting wastewater and storm water separately, while storm water drainage is planned to utilize drain ditch beside the internal road network,
- Industrial wastewater and sewage from toilet are collected into the same pipe to avoid duplication of facilities, and
- Wastewater is transported as free flowing basically by gravity to avoid the possibility of choking in pipes as well as to reduce the cost of construction and maintenance of the pumping system.

Security facilities

The security system of the Agro-industrial Park has been studied considering a balance between the degree of risk controls and cost required. In order to consider the facilities for on-site security in the Agro-industrial Park, object persons, key procedures, and infrastructure are identified as follows:

Object persons: Employees, clients, routine transients, and visitors

Procedures: Admissions, inspection, packaging, shipping, receiving, and delivery

Infrastructure: Office building, factories, all infrastructures such as power supply and water supply

The required security system has been studied for each item mentioned above and efficient security system should be arranged considering security levels and potential risks. Nevertheless, it was clarified in the course of Study Part 3 that high security capital and recurrent costs will put the financial burden on a developer, leading to vulnerability of financial feasibility. In Stage I, it is expected that the total pedestrian, vehicle and cargo traffic will be low so that the minimum security requirements may be considered in conducting inspections. The security measures, at the minimum level, consist of fencing, cameras, patrolling cars and control monitoring system. As the Agro-industrial Park progresses and attracts more businesses, reduced processing time will become crucial; hence, the need for more advanced technologies such as high volume scanners will be needed. Provision of scanners and vehicle tracking system (GPS) would enhance security reliability of outbound vehicles, which would render cost-effective transportation to tenants. Further consideration of a cargo tracking system will be discussed in sub-committee on implementation (see page ES-27).

3.5 Cost Estimation

The project cost of the Agro-industrial Park was estimated for off-site and on-site infrastructure and facilities. The cost estimation is based on the unit price as of 2008, which are collected from various price sources such as Jericho Municipality office and manufactures of equipment in Palestine. The project cost comprised of construction costs, land acquisition cost, administration costs, engineering services costs and the physical contingency. The project cost for the stage-wise implementation and the simultaneous

development of stages I and II is shown below.

Table 9 Project Costs for Stage-wise Development of Stages I, II and III

Description	Unit: Thousand USD		
	Stage I	Stage II	Stage III
Construction cost	25,361	64,623	51,045
Off-site	10,539	31,059	15,018
On-site	14,822	33,564	36,027
Land acquisition	258	5,166	4,141
Administration	384	1,047	828
Engineering services	3,121	8,500	6,722
Physical contingency	2,913	7,933	6,273
Total	32,036	87,270	69,009
Grand total			188,313

Source: JICA Study Team

Table 10 Project Costs for Simultaneous Development of Stages (I+ II) and III

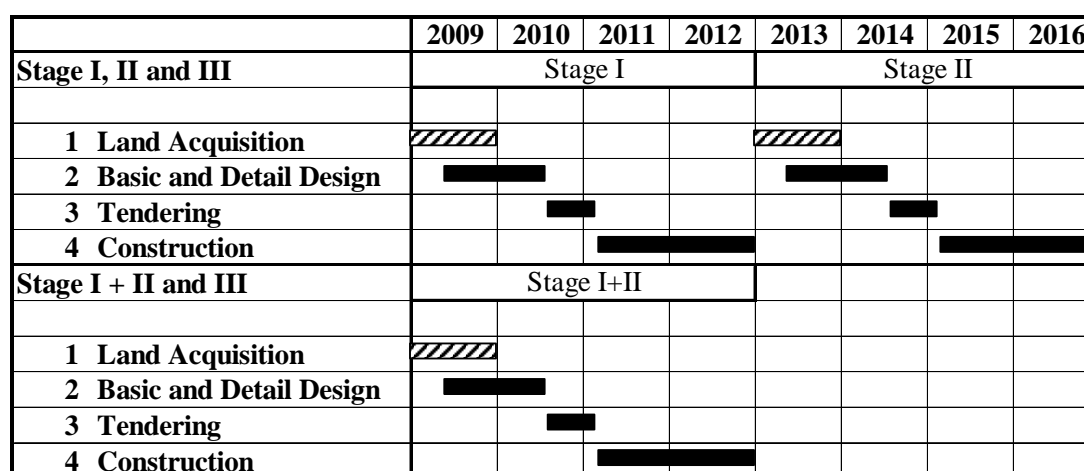
Description	Unit: Thousand USD	
	Stage (I+II)	Stage III
Construction cost	78,564	51,045
Off-site	31,770	15,018
On-site	46,794	36,027
Land acquisition	5,315	4,141
Administration	1,258	828
Engineering services	10,206	6,722
Physical contingency	9,535	6,273
Total	104,889	69,009
Grand total		173,897

Note: USD 1.0 is equivalent to NIS 3.6, Euro 0.7 and JY 108 as of September 2008

Source: JICA Study Team

3.6 Implementation Plan

The implementation plan made for the Agro-industrial Park was intended for the stage-wise development and the simultaneous development of stages I and II. The commencement of stage III depends on further discussion with the PNA and Israel, and the progress of land security by the PNA.



Source: JICA Study Team

Figure 13 Overall Implementation Plan

4. Business Plan of the Agro-industrial Park

In order to reduce the financial burden on initial investment and contribute in sustaining the project viability, it is a prerequisite to assume that the lots for stages II and III shall be secured by the PNA and leased to a developer on a concession basis with minimal concession fee. Based on such condition, two business schemes for establishing the Agro-industrial Park may possibly be sought out, namely, by private sector initiative and public sector initiative.

4.1 Business Scheme by Private Sector Initiative: Scheme A

The business scheme by private sector initiative (Scheme A) may be established by a developer as either a subsidiary or a division of an existing company, or a new private company set-up by shareholders with limited liabilities. The prospective developer shall raise capital from the private sector, develop the Agro-industrial Park, and operate and manage it for 49 years based on land concession contract to be concluded with PIEFZA. Meanwhile PIEFZA cooperates with the developer in marketing activities and functions as one-stop shop for providing the tenant enterprises with necessary administrative services at site. The developer shall make a lease agreement with tenant enterprises who are supposed to pay lease and service fees to the developer. Scheme A is a typical business frame by private sector initiative which may be adopted so that the developer will secure enough profit from the development and operation of the Agro-industrial Park for sustainable business and distribution of dividends.

Such business scheme by private sector initiative is shown in the schematic diagram below.

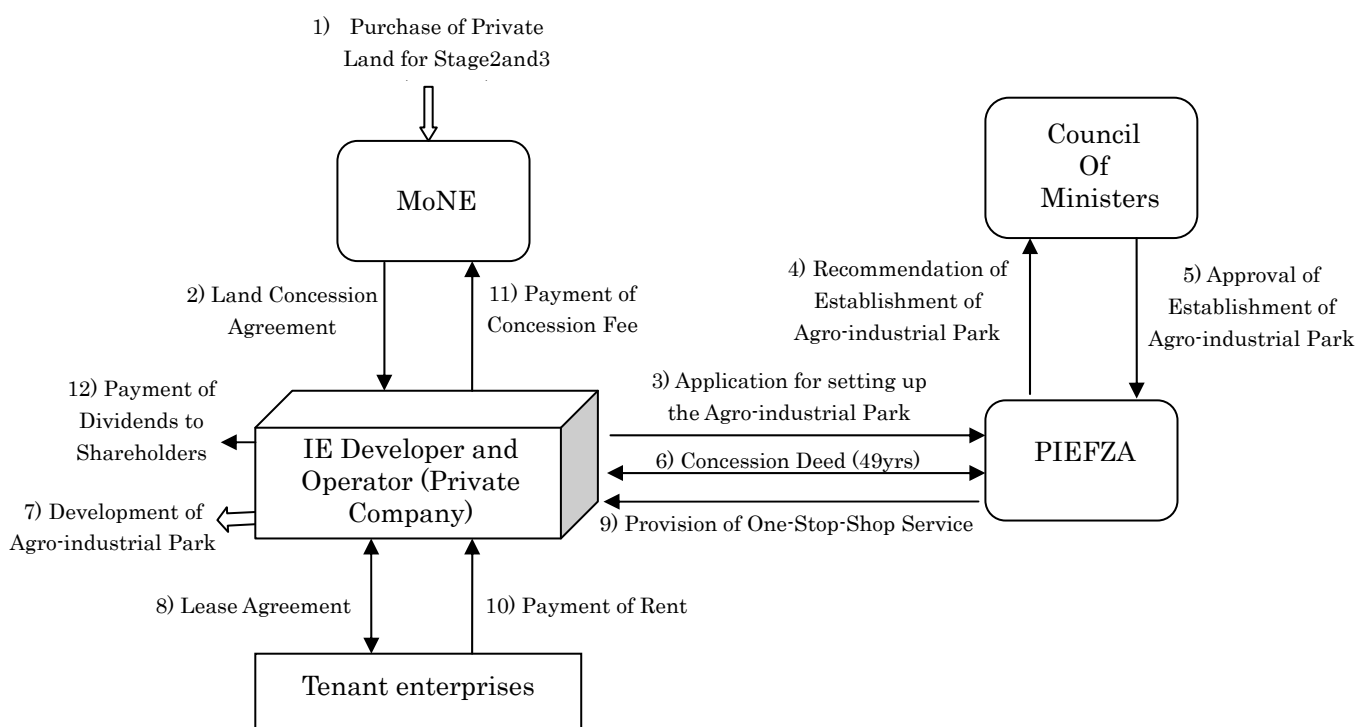


Figure 14 Business Scheme by Private Sector Initiative

4.2 Business Scheme by Public Sector Initiative: Scheme B

The business scheme by public sector initiative (Scheme B) needs a public institution who will act as a developer. PIEFZA could be the project executing organization acting as a developer and operator. Article (5).5 of “Law No.10/1998 regarding Industrial Estates and Industrial Free Zone” designates PIEFZA to conduct direct development of industrial estates and industrial free zones. The business scheme by public sector initiative is shown in the schematic diagram below.

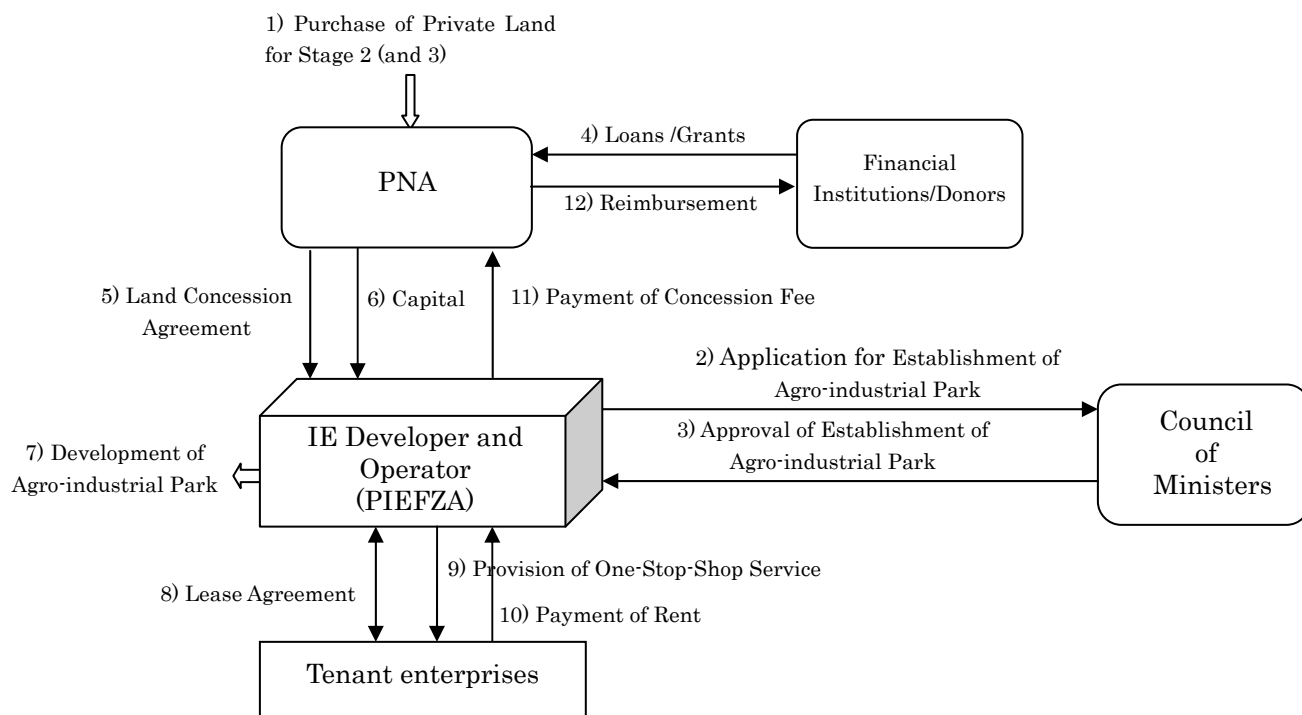


Figure 15 Business Scheme by Public Sector Initiative

The above scheme is based on a prerequisite condition that capital with larger grant elements shall have to be secured by the PNA in the first place. Such capital shall be taken in by the PNA/Ministry of Finance (MoF) from donors and/or soft loan providers. The soft loans, which would carry much lower rate of interest than commercial loans, would be lent to PIEFZA who would be responsible for generating the profits in order to reimburse loans with interests. On the other hand, the grant fund could be used as part of the capital for development of the Agro-industrial Park without bearing any interest. By utilizing such grant funds and soft loans, the project cost would be reduced since the interest is smaller. Moreover, the executing institution need not seek for more profit, as compared to a private developer, in order to distribute dividends to shareholders. As a result, lease rates of open lots, SFBs or office buildings could be reduced.

Public sector played a major role in the development of various types of zone as noted in China and Thailand. In the Philippines as well, the first four export processing zones (EPZ) were developed by its government.

4.3 Lease Rates

Annual lease rates in other industrial estates in Palestine are US\$ 8 to US\$ 12 for open plot, US\$ 26 to US\$80 for plot with factory while those in the industrial estates in the neighboring (Jordan, Syria, UAE and Egypt) countries are far lower, in the range of US\$ 3 to US\$4 for open plot and around US\$ 20 for plot with factory.

On top of it, the manpower cost and utility charges are also lower in those countries than in Palestine. Considering these factors with the restriction on movement of goods and persons and social instability in Palestine, it may be difficult to expect the Foreign Direct Investment (FDI) to flow into the Agro-industrial Park.

Table 11 Rate Setting in Neighboring Countries

Country	Name of Industrial Estate	Selling Price (USD/sq meters)	Tenancy Rate (USD/sq meters/year)
Jordan	Abdullah II Ibn Al-Hussein	Open Lot: 75 SFB: 120 – 150	Open Lot: 3.5 SFB: 21.1
	Al Hassan	Open Lot: 42 SFB: 106 – 141	Open Lot: 3.5 SFB: 21.1
	Aqaba International	Open Lot: 40 SFB: 235	Open Lot: 4.0 SFB: 23.0
Syria	Lattakia, Aleppo		Open Lot: 3.0 SFB: 15.0
UAE			Open Lot: 0.46 – 1.8
Egypt	Six of October	Open Lot: 19.3 – 26.4	Open Lot: 1.75 – 3.5 SFB: 3.7 – 7.0
Israel	Erez	Open Lot: 160 – 200	SFB: 48.0
	Tel Aviv	Open Lot: 800	Open Lot: 8.0

Source: JICA Study Team

If the annual lease rates for open plot in the Agro-industrial Park are assumed to be US\$ 10 and an average company in Palestine leases standard open lot of 2,500 square meters in the Agro-industrial Park, the company would have to pay USD 25,000 per year or 16.5% of the average gross value-added in food and beverages manufacturing sector. This implies that the lease rate of USD10 could be beyond the bearable limit small scale private enterprises.

Accordingly, the initial investment cost of on-site infrastructure components would need public financial assistance in order to reduce annual lease rates for open plot and plot with factory in the Agro-industrial Park.

4.4 Priority Industries

In food and beverages manufacturing sector of Palestine, the companies with more than 10 employees remained at 135 in 2007.

Table 12 Number of Operating Establishments in Food and Beverages Manufacturing Sector

No. of Employee	+100	99-50	49-20	19-10	9-5
No. of Firm	4	7	19	105	386

Source: Table 6-1, Number of Establishments in Operation, PCBS 2007

In order to achieve 90% occupancy planned for stage I and II of the Agro-industrial Park with domestic firms, 42.2% of the existing large-scale firms with more than 10 employees have to move into the Agro-industrial Park within 4 years after its operation starts.

Table 13 Occupancy Scenario and Number of Firms Required to Establish in Stages I and II

Year	1	2	3	4
Occupancy Rate	30%	50%	79%	90%
No. of Firm Required	19	32	44	57

Source: JICA Study Team

To fill up the gap between the available number of industrial lots in the park and the number of firms in food and beverages manufacturing sector, the firms in other sectors may have to be taken into consideration the tenant enterprises in the Agro-industrial Park. Nevertheless, it has to be pointed out that, as far as local firms are concerned, there are only about 100 companies with more than 100 employees existing in Palestine. As shown in Table 1, the factory area is planned to accommodate agribusiness industries and supporting industries, whose occupancy rates are 90% and 5% respectively. If other industries are included, the occupancy rates shared by agribusiness industries would be lower than the planned rate (90 %)..

4.5 Financial Analysis

This section presents the financial viability of on-site development of the Agro-industrial Park based on two business schemes proposed (schemes A and B). The financial analysis of on-site development was made for the cases of “Simultaneous Development of Stages I and II”, “Stage-wise Development of Stages I and II” and “Independent Development of Stage I”. For the purpose of analysis, three options were defined based on the portion of public sector financial assistance regarding on-site development.

a) Option 1

This case implies that a developer finances all the on-site development costs.

b) Option 2

Public financial assistance shall be made to the development of land reclamation, *Wadi* improvement, internal roads, storm water drainage, water supply tank and solid waste collection facilities. The telecommunication distribution facilities are expected to be installed at the expense of the telecommunication company.

c) Option 3

Public financial assistance includes wastewater collection and reclaimed water redistribution facilities, and security facilities in addition to Option 2.

The distribution of initial investment cost in each option is presented in the following table. (“○” indicates that the item will be undertaken by the developer.)

Table 14 Options and Initial Investment Costs for the Developer

Item		Option 1	Option 2	Option 3
B01	General requirements	○	○ ^{*1}	○ ^{*1}
B02	Land reclamation	○	-	-
B03	Wadi improvement	○	-	-
B04	Internal Roads	○	-	-
B05	Storm water drainage channel	○	-	-
B06	Water distribution facilities	○	○ ^{*2}	○ ^{*2}
B07	Power distribution facilities	○	○	○
B08	Wastewater collection and reclaimed water redistribution facilities	○	○	-
B09	Solid waste collection facilities	○	-	-
B10	Telecommunication distribution facilities	○	- ^{*3}	- ^{*3}
B11	Security facility	○	○	-
B12	Parks	○	○	○
B13	Office building	○	○	○
B14	Model factory	○	○	○
B15	Car parking	○	○	○
Initial Investment Cost (USD thousand)^{*4}		Option 1	Option 2	Option 3
a) Stage I Only		18,535	13,411	10,515
b) Stage I, II (Stage-wise development)		60,506	26,356	20,856
c) Stages I + II (Simultaneous development)		58,515	25,230	20,268

*1 General requirements include contractor's temporary buildings, warehouse and repair shops including removal of these facilities after completion of works. Pro rata allocation is applied for private developer share in Option 2 and 3 based on initial investment cost covered by public financial assistance.

*2 Water supply tank is implemented by the PNA

*3 Implemented by the telecommunication company

*4 Includes administration (1.5%), engineering services (12%) and physical contingency (10%), excluding price contingency

Source: JICA Study Team

Business revenues will be generated from lease rates for open plots, SFBs and office buildings, and service fees/rates covering water supply, sewerage, security charge and other services.

Lot allocation according to development stage is as shown in the table below.

Table 15 Lot Allocation of Stages I and II, and Stage I

	Stages I and II	Stage I
Development Area	61.5 ha	11.5 ha
Lease Area	32.01 ha	7.46 ha
(Open Lot)	(26.45 ha)	(3.81 ha)
(SFB)	(2.38 ha)	(2.38 ha)
(Office)	(3.18 ha)	(1.27 ha)

Source: JICA Study Team

Four sets of lease rate package are assumed by referring to the lease rates being applied in the existing GIE and those of the other planned industrial estates in Palestine such as the Jenin and Nablus.

Table 16 Annual Plot and Office Lease Rates

	Open plot (USD/ land plot m ²)	Plot with factory building (USD / land plot m ²)	Office Space (USD / floor space m ²)
Lease rate 1	8.00	35.00	70.00
Lease rate 2	9.00	40.00	80.00
Lease rate 3	10.00	45.00	90.00
Lease rate 4	12.00	45.00	90.00

Source: JICA Study Team based on various sources

Scheme A

Debt-equity ratio of 1.0 is applied to the initial fund requirement of a private sector developer. A 50 % of debt portion is assumed to be loaned from commercial banks subject to loan conditions (interest rate of 8%, 7 year repayment period after a 2-year grace period).

Financial viability of on-site development is assessed by the equity IRR based on cash flow comprising revenue and cost. Through interview survey of potential developers in Palestine, the expected equity IRR was reported to be 10.6 to 14.5% at constant price. Thus the target IRR was set at 10.5% and, according to the results of financial analysis, the target equity IRR is only achieved in Option 3 with high lease rate scenario in case of simultaneous development of stages I and II.

The results of the financial analysis of Scheme A are shown below.

Table 17 Financial Analysis Results: Scheme A (Simultaneous Development of Stages I and II)

Annual lease rate (per m ²)	Option 1	Option 2	Option 3
Lease rate 1: Open Plot USD 8, SFB USD 35, Office USD 70	Below 0%	Below 0%	0.63%
Lease rate 2: Open Plot USD 9, SFB USD 40.0, Office USD 80	Below 0%	2.40%	4.20%
Lease rate 3: Open Plot USD 10, SFB USD 45.0, Office USD 90	Below 0%	5.00%	7.32%
Lease rate 4: Open Plot USD 12, SFB USD 45, Office USD 90	0.87%	7.76%	10.64%

Source: JICA Study Team Note: Financially feasible options (equity IRR more than 10.6%) are highlighted in yellow

Table 18 Financial Analysis Results: Scheme A (Stage-wise Development of Stage I, II)

Annual lease rate (per m ²)	Option 1	Option 2	Option 3
Lease rate 1: Open Plot USD 8, SFB USD 35, Office USD 70	Below 0%	Below 0%	0.30%
Lease rate 2: Open Plot USD 9, SFB USD 40.0, Office USD 80	Below 0%	1.94%	3.76%
Lease rate 3: Open Plot USD 10, SFB USD 45.0, Office USD 90	Below 0%	4.45%	6.90%
Lease rate 4: Open Plot USD 12, SFB USD 45, Office USD 90	Below 0%	6.95%	9.85%

Source: JICA Study Team Note: Financially feasible options (equity IRR more than 10.6%) are highlighted in yellow

Table 19 Financial Analysis Results: Scheme A (Independent Development of Stage I)

Annual lease rate (per m ²)	Option 1	Option 2	Option 3
Lease rate 1: Open Plot USD 8, SFB USD 35, Office USD 70	Below 0%	Below 0%	Below 0%
Lease rate 2: Open Plot USD 9, SFB USD 40.0, Office USD 80	Below 0%	Below 0%	Below 0%
Lease rate 3: Open Plot USD 10, SFB USD 45.0, Office USD 90	Below 0%	Below 0%	Below 0%
Lease rate 4: Open Plot USD 12, SFB USD 45, Office USD 90	Below 0%	Below 0%	0.30%

Source: JICA Study Team Note: Financially feasible options (equity IRR more than 10.6%) are highlighted in yellow

Scheme B

Debt-equity ratio of 4.0 is assumed for scheme B. A public sector developer finances 20 % of the initial investment cost while the remaining 80% is assumed to be loaned from international financial institution(s). Loan scheme assumes an interest rate of 0.75 % plus on-lending rate of 2.75%, with a 30-year repayment period including a 10 year grace period.

Financial viability of on-site development in Scheme B was assessed in comparison with the average cost of capital (4% per annum) in accordance with the Asian Development Bank. The target equity IRR (4.0%)

is achieved in the options of each case shaded in yellow.

The results of financial analysis are shown below.

Table 20 Financial Analysis Results: Scheme B (Simultaneous Development of Stages I and II)

Annual lease rate (per m ²)	Option 1	Option 2	Option 3
Lease rate 1: Open Plot USD 8, SFB USD 35, Office USD 70	Below 0%	5.09%	12.06%
Lease rate 2: Open Plot USD 9, SFB USD 40.0, Office USD 80	Below 0%	15.29%	19.32%
Lease rate 3: Open Plot USD 10, SFB USD 45.0, Office USD 90	0.54%	20.11%	24.03%
Lease rate 4: Open Plot USD 12, SFB USD 45, Office USD 90	7.56%	24.44%	28.51%

Source: JICA Study Team Note: Financially feasible options (equity IRR more than 4.0%) are highlighted in yellow

Table 21 Financial Analysis Results: Scheme B (Stage-wise Development of Stage I, II)

Annual lease rate (per m ²)	Option 1	Option 2	Option 3
Lease rate 1: Open Plot USD 8, SFB USD 35, Office USD 70	Below 0%	2.73%	10.38%
Lease rate 2: Open Plot USD 9, SFB USD 40.0, Office USD 80	Below 0%	14.05%	18.51%
Lease rate 3: Open Plot USD 10, SFB USD 45.0, Office USD 90	Below 0%	19.06%	23.40%
Lease rate 4: Open Plot USD 12, SFB USD 45, Office USD 90	6.65%	22.54%	26.90%

Source: JICA Study Team Note: Financially feasible options (equity IRR more than 4.0%) are highlighted in yellow

Table 22 Financial Analysis Results: Scheme B (Independent Development of Stage I)

Annual lease rate (per m ²)	Option 1	Option 2	Option 3
Lease rate 1: Open Plot USD 8, SFB USD 35, Office USD 70	Below 0%	Below 0%	Below 0%
Lease rate 2: Open Plot USD 9, SFB USD 40.0, Office USD 80	Below 0%	Below 0%	Below 0%
Lease rate 3: Open Plot USD 10, SFB USD 45.0, Office USD 90	Below 0%	Below 0%	5.49%
Lease rate 4: Open Plot USD 12, SFB USD 45, Office USD 90	Below 0%	2.30%	13.75%

Source: JICA Study Team Note: Financially feasible options (equity IRR more than 4.0%) are highlighted in yellow

In order to estimate the possible lease rate reduction in scheme B, the lease rates meeting the target equity IRR of 4 % are calculated. The lease rates reduced are 1) USD 7.9 for open lots, ii) USD 35 for SFBs and iii) USD 70 for offices in Option 2. Meanwhile in Option 3 in the case of the simultaneous development of stages I and II the reduced leased rates are i) USD 7.3 for open lots, ii) USD 35 for SFBs and iii) USD 70 for offices.

Conclusion

- 1) The financial viability of on-site development in scheme A seems to be low, implicating that it would be difficult to find a private sector developer in this scheme unless the PNA prepares a more attractive incentive package, including subsidies for a private developer.
- 2) The estimated equity IRR in scheme B turns out to be mostly more than the average cost of capital (4% per annum) in the case of Options 2 and 3, except for the “Independent Development of Stage I” case.^{7,8}
- 3) In scheme B, the annual lease rates of open plot to meet the target equity IRR of 4% would be reduced to USD 7.9 in Option 2 and to be further reduced to USD 7.3 in Option 3 in the case of the simultaneous development of stage I and II. The estimated lease rates of open plot is competitive to that (USD 8) of the Gaza Industrial Estate (GIE) and lower than the planned rate (USD10) of the Jenin industrial estate.

⁷ Scheme B is based on various assumptions such as PIEFZA as a public sector developer and financial affordability of the PNA for equity finance and favorable loan conditions.

⁸ Even the lowest assumed lease rates seem to be unaffordable by many SMEs in the food and beverages sector in Palestine, taking into account the current annual average rents they are paying .

4) In scheme B, the annual lease rate of open plot to meet the target equity IRR of 4 % is estimated to be USD 9.9, which is still higher than the prevailing rates (i.e. USD 8 in GIE and those in the industrial estates in the neighboring countries). In order to further reduce lease rate for attracting investors, the further option with more grant elements will be required.

5. Administrative Arrangements and Business Support

5.1 Organizational Arrangement for Implementation and Management

For the organizational arrangement for implementation and management, it is recommended that the Minister of National Economy (MoNE), in association with the relevant administrative bodies inside the PNA, the local government and other relevant entities, should set up a steering committee in order to further discuss at the technical level the fields related to i) organizational and financial arrangements of project implementation, ii) technical issues on project implementation, iii) investment promotion and iv) industrial promotion.

The steering committee is proposed to be supported by in-depth, area-specific discussions of its sub-committees on implementation schemes, technical issues, investment promotion, and industrial promotion as shown in Figure 16. The discussions and the decisions of the committee and its sub-committees should be conveyed without delay to relevant stakeholders and the donor community, for the efficient implementation of the project.

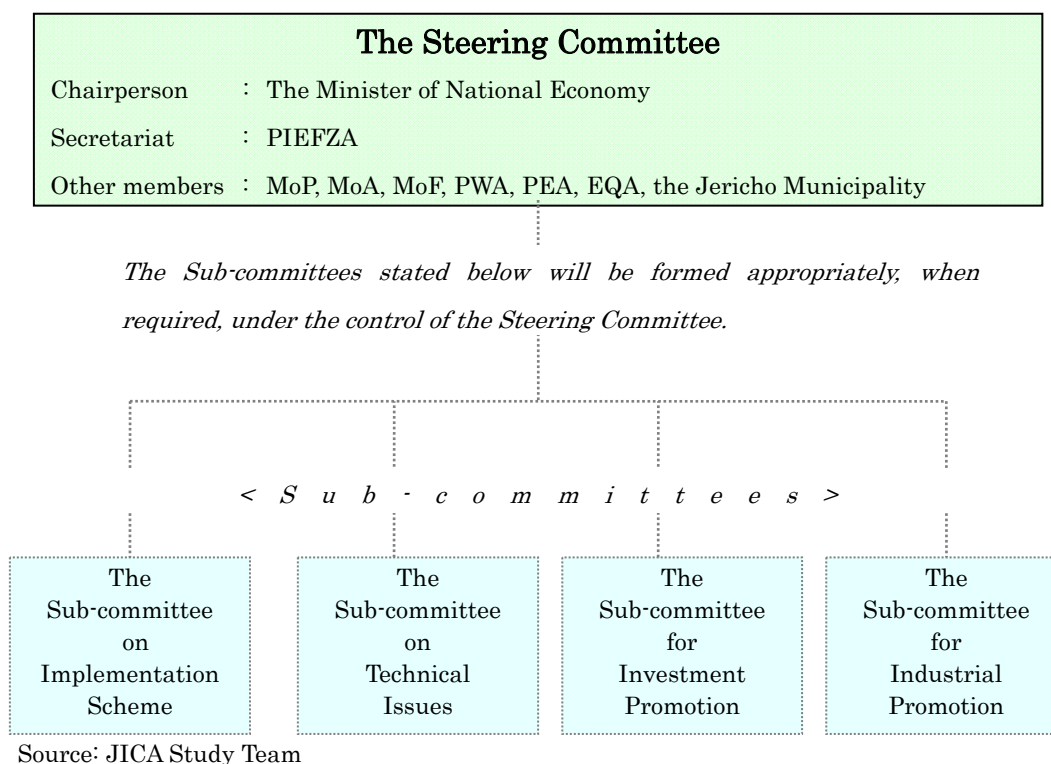


Figure 16 Proposed Organizational Structure of the Steering Committee

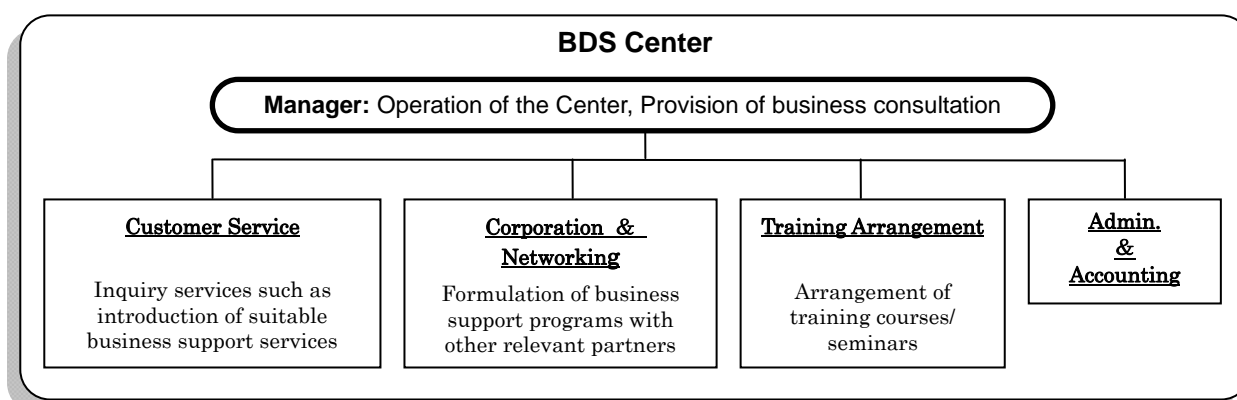
The institutional capacity strengthening of PIEFZA as implementing agency will be necessary in the aspects of human and financial resources. It is recommended to hire skilled experts and/or train existing staff with financial or technical assistance from the donor community. As a regulatory and supervisory administrative body, PIEFZA will need human resource capacity strengthening to fulfill internal control and supervision on the development and management of the Agro-industrial Park. This will also be relevant in monitoring the project performance and development, and in publishing reports. PIEFZA should promote investment in the Agro-industrial Park, while technical assistance will be significantly sought to support their capacity building. The one-stop shop service will require not only the capacity building of PIEFZA but that of all the relevant administrative bodies as a whole. As sole window for the investors of the Agro-industrial Park, PIEFZA should streamline all the necessary administrative procedures for industrial estates development in close cooperation with other relevant agencies.

The institutional arrangement of the off-site infrastructure operators will require further discussions among the concerned stakeholders at the steering committee. The on-site project facilities will principally be constructed and operated by PIEFZA. Some of the off-site facilities meanwhile may be constructed and operated by utility operators, while others by PIEFZA or other public entities.

5.2 Business Support Scheme for Industrial Promotion

Since most of the agribusiness and food processing industries in Palestine belong to small and medium scale enterprise (SME), appropriate support schemes which would enhance their business activities should be developed to attract them in investing in the Agro-industrial Park.

Thus, the BDS⁹ Center which aims to provide various kinds of business supports such as introduction/development of business support schemes, arrangement of trainings/seminars, and provision of market information/business consulting services, is proposed to be established in the Agro-industrial Park. This center would be managed by designated staff from MoNE. The following figure shows the expected organization structure of the BDS Center.



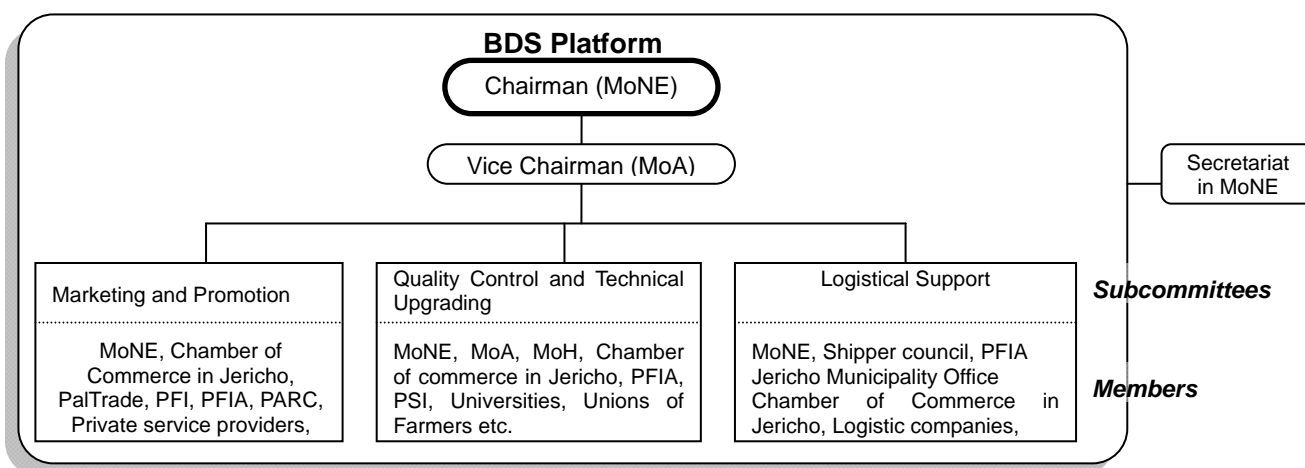
Source: JICA Study Team

Figure 17 Expected Organization Structure of BDS Center

⁹ BDS (Business Development Service) is defined as “a variety of business services which shall improve the marketing performance of enterprises such as accessibility and competitiveness”. BDS include training, consultancy and advisory services, marketing assistance, information, technology development and transfer, and business linkage promotion.

The operational budget of the center must be fully supported by the public sector during at least the initial stage. However, from the viewpoint of long-term sustainability of the BDS Center, it would be considerable to adopt a self-income system by collecting membership fees or service fees from the tenant enterprises in the future. The amount shall be based on the increasing number of tenant enterprises as well as improvement of services provided by the BDS Center will be temporarily set up in an office building intended for the Agro-industrial Park. The BDS Center will move to its new permanent building once constructed, and should start providing more enhanced services.

In order to discuss a wide range of issues which may not be solved by the BDS Center alone, and to determine practical solutions with necessary assistance from the government, the BDS Platform chaired by MoNE is proposed to be established as an advisory committee to the BDS Center. The members of the BDS Platform would be comprised of relevant governmental agencies, business associations, NGOs (non-profit organizations), universities, and private service providers for business support.

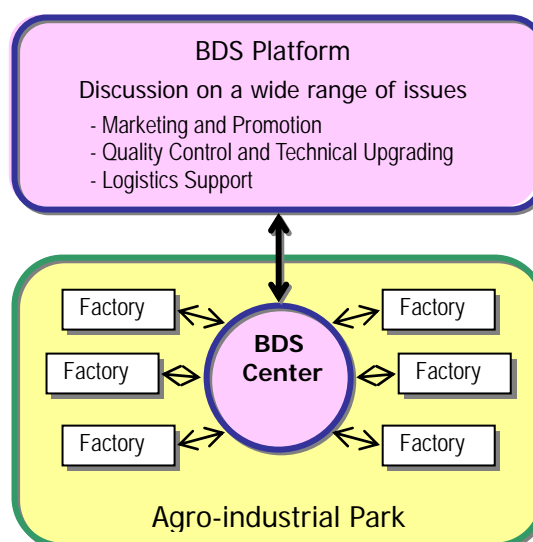


Source: JICA Study Team

Figure 18 Schematic Image of BDS Platform

As a first step towards mobilization of the BDS Platform and the BDS Center, three subcommittees corresponding to its possible primary services would be set up, i.e. i) marketing and promotion, ii) quality control and technical upgrading, and iii) logistical support.

Through the interaction between the BDS Center and the BDS Platform, a practical feedback system for solving problems of the tenant enterprises would be established under the cooperation between the public and private sectors. This feedback system would be a good model for industrial promotion in Palestine.



Source: JICA Study Team

Figure 19 Schematic Image of BDS Platform and BDS Center

6. Conclusions and Recommendations

Phase II Study concludes that a business scheme by the private sector initiative would be difficult for the Agro-industrial Park development based on the results of financial viability of a developer. Therefore, a business scheme by the public sector initiative would be assumed for further discussion on the development of the Agro-industrial Park. In line with this, the conclusions and recommendations towards the implementation stage would be presented as a result of this feasibility study.

(1) Business Schemes of the Agro-industrial Park

The Study presents two business schemes, i.e., .by a private developer and by a public developer. For both schemes the financial analysis is made based on public financial assistance options in which part of the on-site infrastructure would be financed through grant funds from donors since it was realized that financial viability of a developer is difficult to attain without public financial assistance.

The financial analysis is made for i) the simultaneous development of stages I and II, ii) stage-wise development of stages I and II and iii) independent development of stage I. This was initiated by setting options on the combinations of public financial assistance and annual lease rates. It is noted that the lease rates are found to be higher than the prevailing market rates in the neighboring countries such as Jordan.

In the case of the simultaneous development of stages I and II, only the option of combination of higher annual lease rates and higher public financial assistance sustains the financial viability of private sector's business scheme. No option satisfies the financial viability of a private developer in the cases of stage-wise development of stages I and II, and independent development of stage I.

This implicates the difficulty in finding a private developer and tenant enterprises for the Agro-industrial Park under a business scheme by private sector initiative.

Meanwhile, the results of financial analysis based on the business scheme by public sector initiative were found better than that of the private sector initiative.

In the case of the simultaneous development of stages I and II, financial viability of a public developer is sustainable considering combinations of public financial assistance and lower annual lease rates. These implicate that the business scheme by public sector initiative would be possible as indicated in tables 20, 21 and 22.

(2) Conditions for the Agro-industrial Park Development by Public Sector Initiative

The conditions for the Agro-industrial Park development based on public sector initiative by a public developer are:

- a) Public financial assistance for part of the on-site infrastructure and facilities
- b) Equity funding from the PNA for 20 % of the initial investment cost
- c) Borrowing soft loans from international financial institutions for 80 % of the initial investment cost

- d) Institutional strengthening of PIEFZA as a public developer
- e) Investment promotion by a developer to fulfill occupancy scenario (30 % in 1st year, 50 % in 2nd year, 70 % in 3rd year and 90 % in 4th year) applied in the financial analysis
- f) SME development to increase the number of firms that would qualify for the operational requirements in the park, in terms of operation scale, product quality, profitability, exports orientation, etc.

The PNA must take necessary actions to satisfy the above conditions towards the implementation of the Agro-industrial Park. The requirement of PNA's equity for 20 % of the initial investment cost and soft loans for 80 % of it is just one scenario so that the concerned stakeholders are requested to discuss the appropriate portion of equity and soft loans.

(3) Recommendations on Important Issues

Through all the chapters of this report, undertakings and important assumptions necessary to be seriously considered by the PNA are specified. Consequently, recommendations on some of the important issues from the preparatory stage of the Agro-industrial Park development are stated below.

Steering Committee

The steering committee, consisting of four sub-committees, for the Agro-industrial Park development was proposed in the course of the Phase II study. Provided that the business scheme by public sector initiative is accepted by the PNA, the steering committee shall convene immediately in order to discuss the i) implementation scheme, ii) technical issues, iii) investment promotion and iv) industrial promotion. The priority issues to be discussed are:

- a) Organizational and financial arrangement for the Agro-industrial Park development
- b) Investment promotion by public initiative
- c) Institutional arrangement for construction and management of the off-site infrastructure
- d) Establishment of the BDS Platform

The organizational and financial arrangement for implementation of the Agro-industrial Park development project will be the urgent subjects to be discussed among the principal members' organizations of the steering committee. MoNE and PIEFZA shall be responsible for implementation structure of the project while MoP and MoF shall be responsible for financial arrangement (grant or soft loan) from donors or international financial institutions.

The PIEFZA Board of Directors is responsible for promoting industrial estates locally and internationally. Investment promotion by public initiative implies institutional strengthening of the PIEFZA in the area of investment promotion. It shall be required to increase its marketing staff that will focus and facilitate the local target firms for the Agro-industrial Park. The PIEFZA will also be requested to facilitate FDI promotion in cooperation with the relevant organizations such as PIPA and PalTrade. These issues are to be discussed in the sub-committee on investment promotion.

Construction and management of the off-site infrastructure in the Agro-industrial Park development project require discussions on role-sharing and demarcation in construction, operation and maintenance, as well as cost-sharing in operation and maintenance. These issues are to be covered by the sub-committee on implementation scheme and technical issues.

The BDS Platform, designed as an advisory committee under a public-private partnership, will be the first step to realize the business support services to be implemented in the proposed BDS Center. The sub-committee on Industry Promotion should do the preparatory works for the establishment of the BDS Platform.

Movement and Access

In connection with the simultaneous development of stages I and II, there would be a need to initiate further coordination with Israel security authority concerning access road A-2, and smooth passage of goods and people to and from the Agro-industrial Park. The PNA is requested to hold a series of meetings to resolve the following issues:

- a) Conversion of Area C to B in lands where Access Road A-2 is planned.
- b) Facilitation of smooth passage of cargoes and people through the near-by checkpoint (Jericho DCL checkpoint), including inbound transportation for raw materials, and obtaining permission for outbound transportation from the Agro-industrial Park through the Jericho DCL checkpoint
- c) Special treatment for commuting employees, and inbound and outbound transportation vehicles to facilitate passage through other checkpoints

Investment Promotion

During the Study Part 3, the convention entitled “Investors and Business People Meeting to Promote the Agro-industrial Park in Jericho” was held in Ramallah-Palestine, Amman-Jordan and Dubai-UAE in November 2008 with the aim of inviting potential investors to the Agro-industrial Park. Throughout the course of the discussions at these seminars, The followings were identified as the urgent needs below:

- a) The Ramallah meeting covered various inquiries and comments related to the Agro-industrial Park, while the discussions held in Amman and Dubai concentrated on the investment environment in Palestine. The investment promotion strategy for foreign enterprises would need provision of a comprehensive set of investment-related information.
- b) The Ramallah meeting accommodated participants including those from 38 private enterprises. Successive investment promotion in Palestine should target these participants as potential investors.
- c) The Amman meeting accommodated participants including those from 33 private enterprises, where most of which were in agribusiness trading fresh vegetables and fruits. Successive investment promotion in Jordan should attract the agribusiness sector.
- d) The Dubai meeting was attended by seven participants from private business communities. Successive promotion in Dubai would require needs assessment of investment in Palestine.

Based on the results of the three meetings, the sub-committee on investment promotion should discuss strategy focusing on target potential investors based on their information and profile. Investment promotion would need various supports from the concerned stakeholders such as Paltrade, PFIA and MoNE. In the meantime, the staff of PIEFZA should be trained under the internal training programs and technical assistance extended by donors.

Amendment of PIEFZA Law

The current PIEFZA Law (PIEFZL) is legally ambiguous in the areas of industrial estates in terms of its objective, i.e. industrial promotion, ii) license and regulation applied to tenant industries, and iii) income tax incentives according to the size of investment. In particular, the current PIEFZA Law should make clear license, regulation and incentives for export industry in industrial estates. For instance, it is not clear whether they would be subject to the same regulations and incentives that are applied to export industries in industrial free zone. Further the Law does not clarify income tax incentives which are presented in PIPA Law. PIPA is requested to coordinate with PIEFZA for amendment of the PIEFZA Law.

The PIEFZL stipulates PIEFZA as the regulatory and supervisory body for the development and management of industrial estates. Since PIEFZL refers to direct development of industrial estates by PIEFZA, it is recommended that its mandate as a public developer shall be subject to careful review. If considered necessary, said law should be amended to realign its regulatory and supervisory functions, and its status as an implementing agency. Institutional strengthening of PIEFZA as a public developer would cover a wide range of issues such as its legislative status as a public developer, organizational arrangement for on-site management, investment promotion strategy and activities, and coordination with relevant agencies regarding the off-site operation and management.

(4) Proposed Undertakings by the PNA for the Agro-industrial Park Development

Based on the results of the feasibility study, the PNA is requested to satisfy the following conditions for the Agro-industrial Park development.

- (a) In order to secure occupancy scenario, alternative measures have to be prepared to sufficiently increase the local firms involved in food and beverages manufacturing sector. The firms in other sectors must also be encouraged to shift their operations in the park.
- (b) The PNA is requested to establish and implement the strategic policies for trade facilitation and investment climate improvement.
- (c) Investment promotion regulatory framework must be reassessed and improved to be more orderly and competitive.
- (d) Cooperative scheme must be established between PIPA and PIEFZA.
- (e) The measures to strengthen the capacities of PIEFZA have to be sought and implemented.
- (f) The PNA has to secure grants from donors for off-site infrastructure, and part of the on-site infrastructures for stage I and II in the cases of both stage-wise and simultaneous development. This

shall also be initiated for most part of on-site infrastructure for stage I in the case of independent development of stage I only.

- (g) In case of scheme B, the PNA has to allocate its own portion of fund as part of the initial investment cost for on-site construction.
- (h) In case of scheme B, the PNA has to secure enough soft loans from international financial institutions in order to cover the remaining investment cost for on-site construction.
- (i) The PNA needs to start discussing “movement and access” issues with the Israel security authority at the earliest possible stage, considering the timeframe of the Agro-industrial Park development.
- (j) The urgent policy decision by PNA on solid waste treatment in Jericho is a pressing issue, considering the construction of the Agro-industrial Park and rapid increase in the number of residents and visitors.
- (k) The measures to keep transparency in implementing and operating the Agro-industrial Park have to be established.
- (l) PNA needs to materialize SME development and support policies to enhance the capacity of small and medium scale of enterprises.
- (m) The current income tax incentive is given to investors whose investment amount is more than USD 100,000 according to the “ Law No. 10/1998 regarding Industrial Estates and Industrial Free Zones Law”. In the meantime, it is significant to attract SMEs which have not enjoyed current tax incentive in order to facilitate more investment in the Agro-industrial Park. Therefore the minimum investment ceiling currently provided to the enterprises with investment amount of USD 100,000 should be lowered.

**Feasibility Study
on
Agro-industrial Park Development
in
the Jordan River Rift Valley**

**Final Report
Volume 1
(Main Report)**

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Abbreviations and Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACAD	Arab Center for Agricultural Development
BDS	Business Development Services
BMIP	Bethlehem Multi-disciplinary Industrial Estate
BOD ₅	5-days Biochemical Oxygen Demand
BRC	British Retail Consortium
CA	Catchment Area
DAWC	Daily Average Water Consumption
DAWD	Daily Average Water Demand
DFID	Department for International Development
DFR	Draft Final Report
DMWC	Daily Maximum Water Consumption
EAC	Environmental Assessment Committee
EC	Electrical Conductivity
EIA	Environmental Impact Assessment
EMMP	Environmental Monitoring and Management Plan
EQA	Environmental Quality Authority
ESC	Environmental and Social Consideration
ESDC	Economic and Social Development Center- Palestine
EU	European Union
F/S	Feasibility Study
GAP	Good Agricultural Practice
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GIE	Gaza Industrial Estate
GoI	Government of Israel
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
ha	Hectare
HACCP	Hazard Analysis and Critical Control Point
HMWC	Hourly Maximum Water Consumption
IDB	Inter-American Development Bank
IE	Industrial Estate
IEE	Initial Environmental Examination
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IMC	Industrial Modernization Center
ISIC	International Standard Industrial Classification
ISO	International Organization for Standardization
ITR	Interim Report
IWA	Israeli Water Authority
JCspd	Joint Councils for Services, Planning and Development
JDECO	Jerusalem District Electric Company
JICA	Japan International Cooperation Agency
JIE	Jenin Industrial Estate
JRRV	Jordan River Rift Valley
km/h	kilometer per hour
kV	Kilo Volt

kW	Kilo Watt
kWh	Kilo Watt Hour
m/s	Meter per Second
m ³ /s	Cubic Meter per Second
MCM	Million Cubic Meter
MoA	Ministry of Agriculture
MoF	Ministry of Finance
MoH	Ministry of Health
MoHE	Ministry of Higher Education
MoL	Ministry of Labor
MoLG	Ministry of Local Government
MoNE	Ministry of National Economy
MoP	Ministry of Planning
MoPW	Ministry of Public Works
MoTel	Ministry of Telecommunication
MPN	Most Probable Number
MVA	Mega Volt Ampere
MW	Mega Watt
NARC	National Agricultural Research Center
NGOs	Non-Governmental Organizations
NIIC	Northern International and Industrial Co.
NIS	New Israeli Shekel
O&M	Operation and Maintenance
OCHA	Office of the Coordination of Humanitarian Affairs
PalTrade	Palestinian Trade Center
PAPA	Palestinian Agribusiness Partnership Activity
PARC	Palestinian Agricultural Relief Committee
PBA	Palestinian Businessmen Association
PCBS	Palestinian Central Bureau of Statistics
PEA	Palestinian Energy Authority
PFCCIA	Palestine Federation of Chambers of Commerce, Industry and Agriculture
PFI	Palestinian Federation of Industries
PFIA	Palestinian Food Industries Association
PIC	Palestinian Investment Conference
PIEFZA	Palestinian Industrial Estates and Free Zones Authority
PIEFZL	Palestinian Industrial Estates and Free Zones Law
PIPA	Palestinian Investment Promotion Agency
PITA	Palestinian Information Technology Association
PNA	Palestinian National Authority
Prep.	Preparatory
PSC	Palestine Shippers Council
PSI	Palestinian Standard Institute
PWA	Palestinian Water Authority
R&D	Research and Development
RFID	Radio Frequency Identification
SEC	Small Enterprises Center
SMEs	Small to Medium Scale Enterprises
SS	Suspended Solids
TA	Technical Assistance
TDS	Total Dissolved Solids

TOR	Terms of Reference
T-N	Total Nitrogen
TSS	Total Suspended Solids
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations Industrial Development Organization
USD	United States Dollar
USAID	United States Agency for International Development
VAT	Value-Added Tax
WB	West Bank
WWTP	Wastewater Treatment Plant

CHAPTER I INTRODUCTION

I-1 Background

The “Feasibility Study on Agro-industrial Park Development in the Jordan River Rift Valley” (hereinafter referred to as “the Study”) consists of Phase I and Phase II Studies based on the time table as shown in Figure I-1-1. Phase I Study was implemented as a pre-feasibility level study during the period from March 2007 to August 2007, and Phase II Study was implemented as a full-scale feasibility study from December 2007 to November 2008.

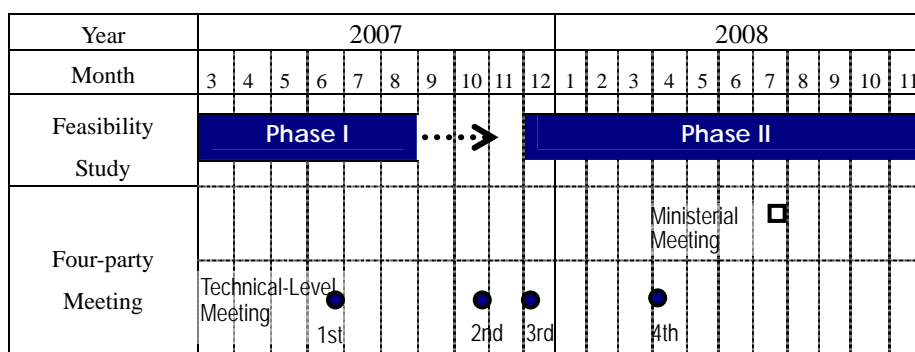


Figure I-1-1 Implementation Period of the Feasibility Study

Phase I Study focused on the following works:

- a) Industrial sector study
- b) Investment environment
- c) Industrial development strategy
- d) Industrial park development

Phase I Study concluded that the Agro-industrial Park development would be a significant project to fulfill the missions in line with the industrial development strategy and the Japanese initiative for the “*Corridor for Peace and Prosperity*”. It includes the following findings/issues for further clarification, prior to the commencement of the full-scale feasibility study:

- Determination of project site and access roads
- Improvement of restrictions on movement and access to and from the Agro-industrial Park
- Promotion of agro-industry and investment

During the course of the Phase I Study, an inter-regional consultation platform called *the Four-party Consultative Unit*, under the initiative mentioned above, was formulated through the participation of the Palestinian National Authority (PNA), Israel, Jordan and Japan for the purpose of promoting confidence-building through economic cooperation.

The first technical level meeting was held on 27 June 2007, where regional cooperation issues were discussed actively by the participants. However, the PNA and Israel had different views on the site selection, and consequently did not reach an agreement.

The second technical level meeting was then held on 25 October 2007, in which the result of the Phase I Study was presented to the stakeholders. During this meeting, there was also an exchange of various opinions. Concrete steps forward were marked, as follows, including an agreement on the site selection:

- The candidate site for the Agro-industrial Park covers 111.5 ha, and is next to the existing steel factory in the southern fringe of Jericho City. The site consists of Area A (61.5 ha) and C (50 ha). Construction of the Agro-industrial Park will start in Area A. The future expansion of the Agro-industrial Park in Area C would be subject to further discussion.
- As for the access road from the Agro-industrial Park to the Allenby Bridge, Israel recommended utilizing the existing road through the checkpoint, since its capacity would be sufficient to accommodate traffic volume to and from the Agro-industrial Park, during the initial stage of its operations. The access route however should be determined in consideration of both economic and security aspects.
- A consensus for regional cooperation was reached in the field of agriculture.

Considering these results, it was announced during the third technical level meeting on 3 December 2007 that the Phase II Study, a full-scale feasibility study, should be immediately carried out.

The Phase II Study consists of three parts. The Part I Study of Phase II had been undertaken from December 2007 to March 2008 for the purpose of making clear basic conditions for the efficient and effective implementation of the feasibility study. On 1 April 2008, upon completion of Part 1 of the Phase II Study, the fourth technical level meeting was held. During the meeting, the results of the latest study were presented to the stakeholders, showing the development concept for efficient and effective realization of the Agro-industrial Park, i.e., linkage among JICA's activities and stage-wise development scenario¹.

A ministerial meeting was held on 2 July 2008, where the four parties confirmed the soonest possible implementation of the Agro-industrial Park, the public-private partnership for the development and agricultural technical cooperation.

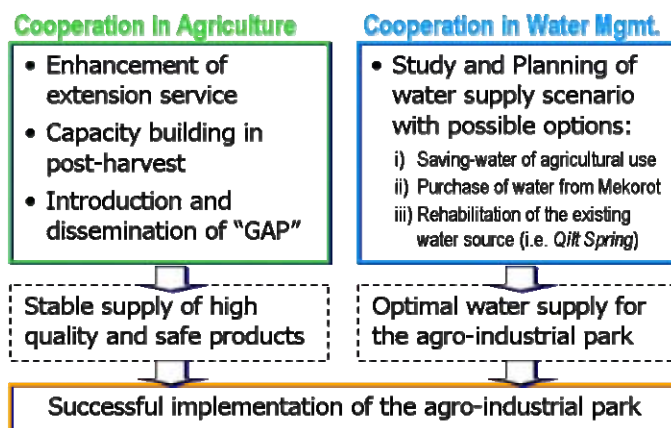


Figure I-1-2 Linkages among the JICA Projects

¹ It was recommended in the previous Part 1 study that the Agro-industrial Park shall be developed by stages, i.e. Stage I, Stage II and Stage III, to meet the development progress of the fundamental conditions such as “agricultural improvement in quality, quantity and safety” and “optimal water resources management”, while making efforts to improve movement and access for the Agro-industrial Park in cooperation with the stakeholders concerned. This recommendation was accepted in principle by the members of the four-party consultative unit as a provisional bench mark for the development schedule.

I-2 Framework of Phase II Study

Phase II Study consists of three parts. The Study Part 1 concluded that the stage-wise development approach would be taken as a development scenario for successful implementation of the Agro-industrial Park development. The Study Part 2 presented the development planning of the Agro-industrial Park, engineering study and organizational arrangement for implementation with industrial and investment promotion. The Study Part 3, the last stage of the full scale feasibility study, focused on business schemes of the Agro-industrial Park and financial viability.

Year	'07	2008											
Month	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Feasibility Study		Part 1			Part 2				Part 3				
Four-party Meetings	Ministerial Meeting							□					
Technical-Level Meetings	● 3rd				● 4th								

Figure 1-2-1 Time Table of the Phase II Study

The Part 2 and Part 3 studies, consisting largely of investment promotion and development planning, have been implemented from April to November 2008. The following figure shows workflow of two study components in the course of said studies.

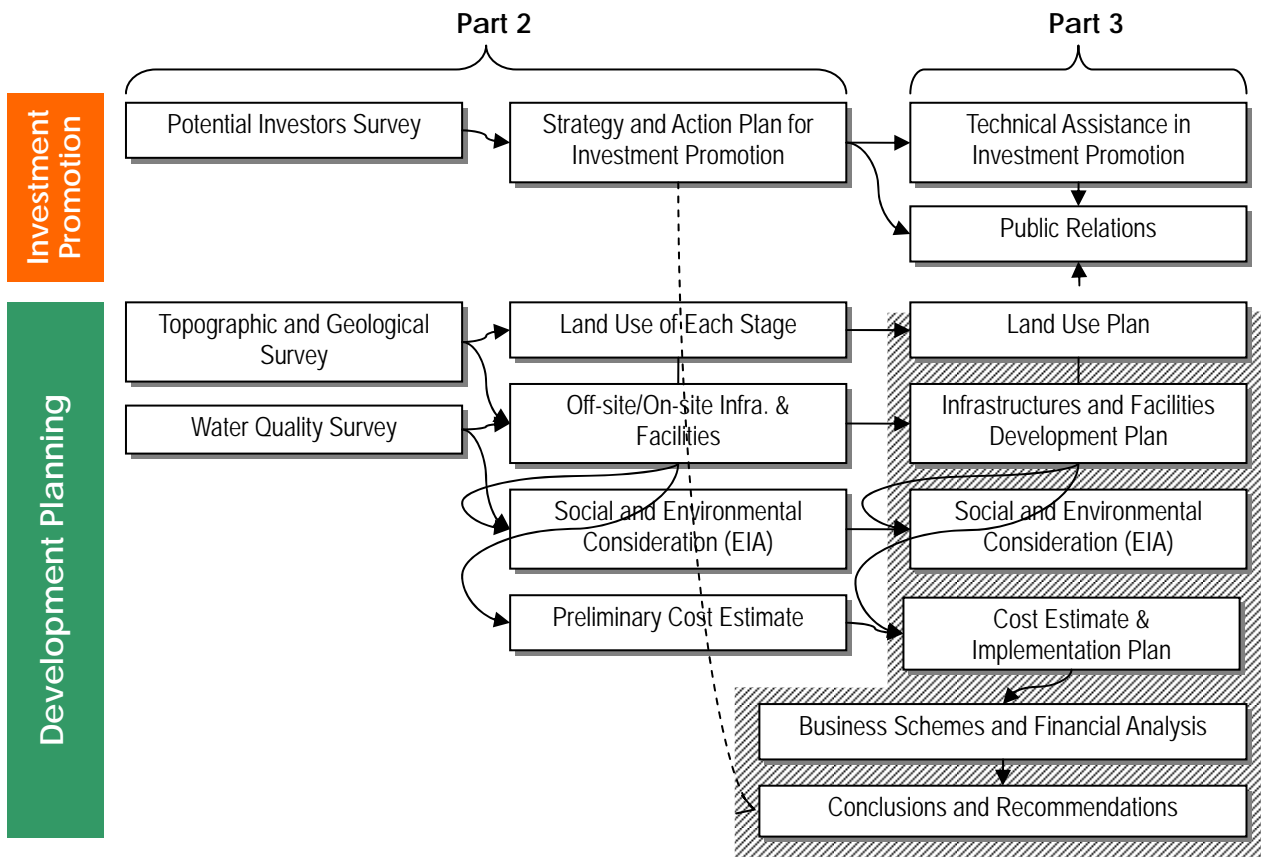


Figure I-2-2 Workflow of the Phase II Study (Part 2 and 3)

I-3 Results of the Study

During the course of the Study Part 2, JICA Study Team (JST) held sessions with stakeholders and attended related events conducted by the PNA in accordance with the requirements for the Study. The major sessions/events with corresponding outlines are as follows:

Table I-3-1 Major Sessions/Events and Outlines of the Study Team Activities

Date	Title	Outline of the Activity
27 April 2008	Joint Session with the PNA agencies	Explanation and discussion on the inception report for the Part 2 and 3
29 April 2008	Joint Session with Israel agencies	Explanation and discussion on the inception report for the Part 2 and 3
22 May 2008	Palestinian Investment Conference (PIC)	Assistance to Palestinian Industrial Estates and Free Zones Authority (PIEFZA) for their public promotion activity
26 May 2008	Meeting with Ministry of Environment, Israel	Explanation and discussion on the anticipated environmental issues of the Agro-industrial Park
10 June 2008	1 st Public Consultation Meeting for EIA	Explanation and discussion on the terms of reference for EIA, incorporating group discussions
11 June 2008	Meeting with Israeli Water Authority (IWA)	Discussion on the possibility of water supply from Mekorot to the Agro-industrial Park
19 June 2008	Joint Session with the PNA	Discussion on the issues/ideas related to the Agro-industrial Park development

In the meantime, for the purpose of verifying physical conditions of the candidate site for the Agro-industrial Park, topographic survey, geological survey and water quality and quantity survey were carried out by Palestinian surveying offices/companies². Table I-3-2 shows the outline of each survey:

Table I-3-2 Outline of Surveys for Physical Conditions of the Site

<Topographic Survey>

Name of Surveying Office	Modern Survey Office Name of Project Manager: Mazen D. Kawamleh
Output	- One set of field survey notes and computation sheets - One set of description of new bench marks - Two sets of 1:2,000 scale original topographic maps - Five sets of copies of 1:2,000 scale topographic maps - One set of survey report in English - One set of AutoCAD file saved in CD
Survey Schedule	From 7 June 2008 to 24 July 2008
Note	The survey was launched from the site in Area A. It was succeeded by the survey in Area C after an approval from the relevant Israeli authorities was obtained.

<Geological Survey>

Name of Surveying Office	Hijjawi Construction Labs. Name of Project Manager: Sami A. Hijjawi
Output	- Daily report - Investigation report which incorporates the drill logs, the result of standard penetration test, photos, all existing data related to the work, summary of the result of geological investigations and geological maps of the site.
Survey Schedule	From 28 June 2008 to 24 July 2008
Note	The survey was launched from the site in Area A. It was succeeded by the survey in Area C after an approval from the relevant Israeli authorities was obtained.

² The surveying offices/companies were properly selected through public tender or designated tender in compliance with JICA's guideline for sub-contract, in consultation with the related PNA agencies, i.e. PIEFZA, MoP and PWA.

<Water Quality and Quantity Survey>

Name of Surveying Office	Al Manara International Company Name of Project Manager: Ahmad Ebaisi
Output	- Report on water quality analysis - Report on pumping test - Soft copy of the above outputs
Survey Schedule	From 24 July 2008 to 23 Aug 2008
Note	The survey was conducted for four existing water sources.

During the Study Part 3, JST also held sessions and seminars with stakeholders and attended related events in accordance with the requirements for the Study. The major sessions/events with corresponding outlines are as follows:

Table I-3-3 Major Sessions/Events and Outlines of the JST Activities (Study Part 3)

Date	Title	Outline of the Activity
4 September 2008	Joint session with Israeli Agencies	Explanation and discussion on the Interim Report for the Study Part 2
22 September 2008	Joint session with the PNA agencies	Explanation and discussion on the Interim Report for the Study Part 2
26 September 2008	TV conference on Grant and TA application	Discussion on grant and TA application for the Agro-industrial Park development
15 October 2008	2 nd Public Consultation Meeting	Presentation and discussion based on the draft Environmental Impact Assessment
6 November 2008	Investment promotion seminar (Ramallah)	Introduction and promotion of the Agro-industrial Park in Jericho targeting private sector investors
11 November 2008	Investment promotion seminar (Amman)	Introduction and promotion of the Agro-industrial Park in Jericho targeting private sector investors
13 November 2008	Investment promotion seminar (Dubai)	Introduction and promotion of the Agro-industrial Park in Jericho targeting private sector investors
25 November 2008	TV conference on DFR	Presentation and discussion on the Draft Final Report for the Study Part 3
27 November 2008	Joint session with MoP	Explanation and discussion on the results of DFR based on Executive Summary

Study Part 3 is the last stage of the full scale feasibility study .The draft final report has been prepared to present the results of the feasibility study (Parts 1, 2 and 3), consisting of Volume 1 (Main Report) with Annexes, and Volume 2 (Reference Data and Materials of Engineering Study).

Volume 1 (Main Report)

The components of the main report are:

- i) Development planning for the Agro-industrial Park
- ii) Engineering study
- iii) Business plan of the Agro-industrial Park
- iv) Administrative arrangement and business support

Development planning firstly highlights the basic principles of the Agro-industrial Park development in the context of industrial/export promotion and priority industries. It then presents scenarios such as on-site land use plan and stage-wise development of off-site and on-site infrastructures. Development planning also includes values of the Agro-industrial Park, analysis of the project's effects on domestic economy including

economic analysis of the project, environmental and social considerations, and movement and access to and from the site.

Engineering study presents the topographic and geological conditions of the site, on-site land use plan, design criteria for off-site and on-site infrastructure and facilities, and on-site security system. The Agro-industrial Park would accommodate 137 factories as tenants during its full scale stage (Stage III). Thus, engineering study starts with the analysis of the expected scale of necessary infrastructures and facilities and presents plan of the key infrastructures such as water and power supply, waste water treatment and solid waste management.

Business plan of the Agro-industrial Park, the core output of the Study Part 3, presents relevant business schemes, management and operation plans, marketing and promotion plans, and financial analysis focusing on financial viability of said schemes.

Administrative arrangement and business support presents organizational arrangements for the steering committee for the Agro-industrial Park and institutional strengthening of PIEFZA. Business support also covers business development services required for tenant enterprises to attract investors.

Annexes

The annexes consist of four parts: A) Investment Survey, B) Environmental Impact Assessment (EIA), C) Economic Effects of the Agro-industrial Park, and D) Brief Information on Investment to Palestine. Annex A includes the results of interview surveys carried out for 50 sample enterprises, which are deemed as important inputs for various elements of the Study, such as investment demand and expected scale of necessary infrastructures. Annex B presents the EIA report compiled in the Study. Annex C shows a more detailed analysis of the economic effects of the Agro-industrial Park. Annex D covers the principal information on business and investment environment in Palestine, which was distributed to the participants of the above mentioned investment promotion seminars held in Ramallah, Amman and Dubai in November 2008.

Volume 2 (Reference Data and Materials of Engineering Study)

Volume 2 consists of the following drawings and documents related to the results of the engineering study, as references to the results presented in the Main Report.

- i) Engineering drawings
- ii) Engineering calculation sheet
- iii) Reports on site investigation (topographic survey, geological survey and water quality and quantity survey)

CHAPTER II DEVELOPMENT PLANNING FOR AGRO-INDUSTRIAL PARK

II-1 Basic Principles of Agro-industrial Park Development

(1) Significance of the Agro-industrial Park in the National Policy

The present Jordan River Rift Valley (JRRV) is relatively endowed with agricultural resources. Promotion of agro-industry aiming at high value-added products would enhance the region's potential in agriculture and exports of its products (see Figure II-1-1).



Figure II-1-1 Schematic Image of the Present JRRV

It is expected that the Agro-industrial Park will be vital for the economic upgrading of the JRRV, which will contribute to challenging future goals, i.e. “improvement in agriculture”, “promotion of agro-industry”, and “enhancement of competitiveness in the export market”. The following figure illustrates the future image of the JRRV in which the Agro-industrial Park is expected to contribute in reaching the defined goals. It is legally ambiguous according to the current PIEFZA Law whether the planned Agro-industrial Park is defined as industrial estate or industrial free zone. Provided that the Agro-industrial Park is defined as the industrial free zone, export enterprises in the Agro-industrial Park may be allowed to sell 20 % of their production to domestic market.

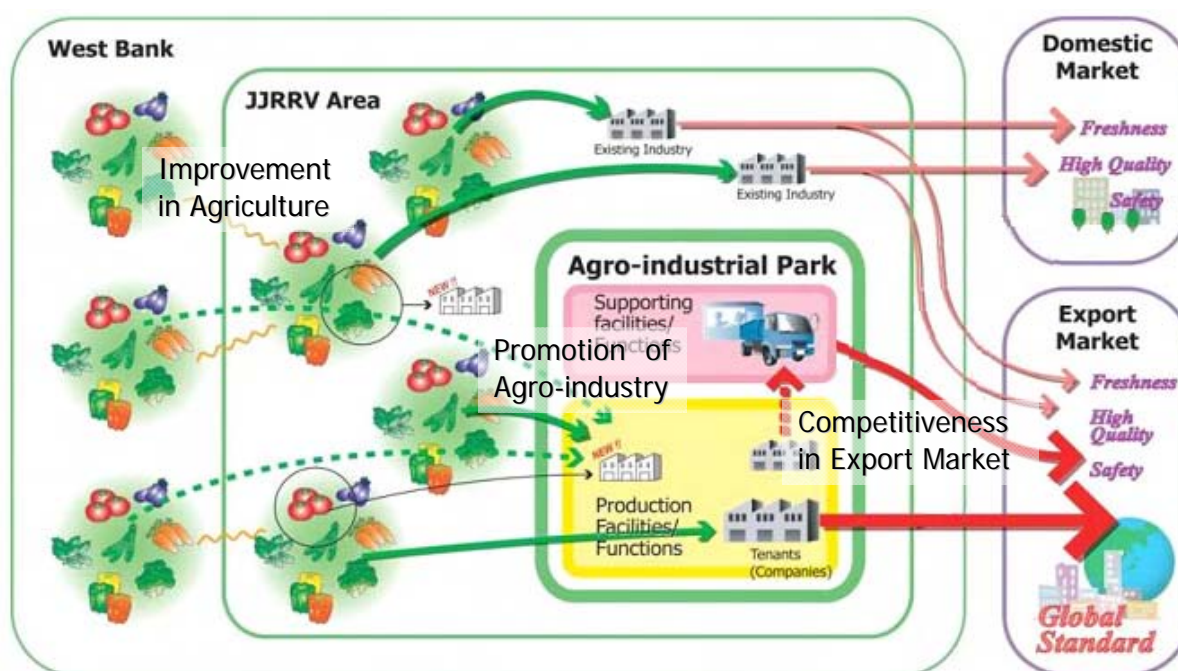


Figure II-1-2 Schematic Image of the Future JRRV

It is noted that the private sector's expectation on the future economic improvement with the Agro-industrial Park, is assessed relatively high based on the results of the investment survey of companies conducted during the Study Part 2 (see the right box; the result is shown in Annex A-10).

In response to their expectations, concerned agencies were requested to exert efforts in supporting the governmental programs of the PNA, in addition to the Agro-industrial Park development. Programs such as agriculture sector improvement, water resources management and agro-industry promotion are supposed to be among the relevant programs to be implemented by the PNA.

BOX 1

Expectation from the Private Sector

- **No. of surveyed companies: 50**
Fresh fruits (dates, grapes), Meat, Dairy, Confectionary, Wheat, Animal feed, Drinks, Pharmaceutical, Supporting industries such as packaging, machineries and logistics.
- **Relatively high willingness to invest in the Agro-industrial Park (41 companies)**
- **They expect:**
Such services as quality control, packaging consulting, export facilitation, market information, exhibition, shipping, custom clearance and one-stop administration.
Such incentives as financial access, preferable rent, access to qualified labor, etc.

Agriculture Sector Improvement is to be implemented under the full commitment of the Ministry of Agriculture (MoA) of the PNA, with the objective of improving the quality, quantity and safety of agricultural products to satisfy foreign market demands. Since sufficient agricultural production is essential for the successful implementation of the Agro-industrial Park, MoA is requested to take appropriate governmental actions such as the establishment and dissemination of product quality assurance system, i.e., global Good Agricultural Practice (GAP), and extension of necessary field training to farmers. JICA is currently undertaking a technical cooperation project in agriculture aiming at the enhancement of farmers' productivity in quality and quantity.

Water Resources Management is to be promoted under the responsibility of Palestinian Water Authority (PWA) with the objective of efficiently and effectively utilizing the precious water resources. Necessary actions are to be taken according to timeframes. In the short term, dissemination and training on water-saving agricultural technology for farmers is considered appropriate for optimized utilization of water resources. Meanwhile, in the long term, water resources development including recycling of used water would be appropriate to meet the future water requirement of the Palestinian people. JICA conducted a feasibility study on water resources management, with some pilot projects intended to rehabilitate wells and water conveyance systems, while PWA is requested to continue activities necessary to optimize water resource management in the whole JRRV area.

Agro-industry Promotion is a new challenge to be jointly implemented by Ministry of National Economy (MoNE) and MoA of the PNA for the purposes of enhancing a high value-added market based on sufficient quality, quantity and safety of local agricultural products. Since most companies/enterprises³ engaged in agro-industry in the West Bank are categorized as small to medium scale enterprises (SMEs), intensive governmental actions are necessary to be taken for agro-industry promotion. These would require references

³ Ninety-eight percent of the enterprises are classified as small and medium scale enterprise (SME), considering their number of employees.

on several actions adopted for various cases in other countries. For instance, strict compliance with product quality assurance system (i.e., Hazard Analysis and Critical Control Point or HACCP, ISO 22000), strengthening of business development service (BDS) functions, and financial and technical support to SMEs are to be facilitated through the PNA's public initiative.

It is therefore necessary to carry out the related programs in agriculture, agro-industry and water resources management for successful implementation and sustainable operation of the Agro-industrial Park.

(2) Development Concept and Priority Industries

As a basic concept for the Agro-industrial Park development, a thematic industrial park where people engage in a variety of production related to human well-being was proposed in the Phase I study (Pre-feasibility Study). Under which, agribusiness industries (dealing with fresh vegetables and fruits, food processing industry and pharmaceutical industry) were considered to be promising, based on the industrial sector study towards the future.



A thematic Industrial Park, where people engage in a variety of production related to "Human Well-Being"

Figure II-1-3 Visual Image of the Agro-industrial Park

After conducting an in-depth survey of related companies, JICA Study Team provisionally concluded that agribusiness industries⁴ are to be prioritized since these have potential in producing and exporting high value-added products, matched with the efforts currently taken through private initiative. Meanwhile, less priority is given to pharmaceutical industry since the willingness in promoting this sector seemed less according to the investment survey conducted during the Study Part 2⁵. In this context, agribusiness industries are prioritized for promoting investment in the Agro-industrial Park.

(3) Export Promotion of Priority Industries

Export promotion of priority industries is the important mission of the Agro-industrial Park development. European countries would be prospective markets for high value-added products, especially fruits and vegetables such as cherry tomatoes, sweet pepper, herbs and seedless grapes among others, considering exploit on seasonal difference in planting and cultivation cycle between Palestine, especially JRRV, and European countries. In addition, Palestinian products also have potential in some niche markets, such as organic, exotic foods (traditional herbs, etc.) and fair-trade markets⁶ if required quality standards in the target markets are met. To meet such quality standards, it would need certain investment and thus resulting in higher

⁴ Such industries as fresh fruit and vegetable trading, meat processing, dairy, confectionary, wheat, animal feed processing, drinks, and supporting industries (packaging, machine and logistics) are the priority target.

⁵ According to the interview of pharmaceutical companies, they have begun marketing their products in new market (e.g. Europe) recently with a large amount of investment. For this reason, it is difficult at this point for them to make additional investment though they have relatively high interest in the Agro-industrial Park in the long term.

⁶ According to PARC, products such as olive oil sold by fair trade channels can have thirty to forty percent of the price premium, compared to non-fair trade markets.

production costs than the production for conventional markets⁷. However, it is worth mentioning that Palestine has certain advantages in some areas. For example, Palestinian certification body for organic products is established in 2008, while the neighboring country Jordan does not have their own organic certification body. Those markets are currently small in size but are continuously growing⁸. In the meantime, it is also noted that these markets do not necessarily require big quantity of supply. Thus, organic foods can be potentially exported subject to limited production quantity.

In the neighboring countries such as Jordan and other Gulf states, increase in purchasing power together with insufficient domestic production, as well as the existence of Palestinian communities in said countries implies potential for Palestinian companies to export fresh and processed products.

However, in order to promote the export of Palestinian's fresh and processed products, improvement in production quality and quantity remains a challenge that has to be dealt with. Considering this situation, the number of export enterprises in food processing industry is limited with only 52 establishments which are registered in the Export Directory published by PalTrade, although there are actually about 2,000 establishments engaged in food processing industry in West Bank.

Realizing this, export promotion of Palestinian agro-industries has to be planned and implemented based on long term projections.

The following figure shows a potential marketing goal and focus in terms of short, medium and long term development for Palestinian agro-industries, together with the proposed Agro-industrial Park development with tentatively set timeframe.

	Short Term 2009~2011	Medium Term 2012~2014	Long Term 2015~
Marketing Goal		- <u>Market expansion of Existing Products</u> - <u>Import Substitution</u>	- <u>Export of High Quality Products</u>
Marketing Focus	Domestic	Domestic Foreign	Foreign
Industrial development activities	Improvement in Agricultural production/ quality	Improvement of Competitiveness in Export Market	Improvement of Competitiveness in Export Market
Investment promotion activities for the Agro-industrial Park	General promotion of the Park + Capacity building of PIEFZA	Promotion focusing on domestic companies Promotion focusing on foreign companies	
Agro-Industrial Park Development	I+II	Design- Construction	Tenants factories establishment
	III	---	Tenant factories establishment

Source: JICA Study Team

Remarks: Marketing goal and focus are expressed in time frame. The Agro-industrial Park would primarily promote export industry irrespective of time frame.

Figure II-1-4 Relation of Marketing Goals, Industrial Development and Agro-industrial Park Development

⁷ In addition to quality standard, Fairtrade Labeling Organization International (FLO) sets standards for producers and traders in terms of social and economical point of view, such as working conditions of the labors.

⁸ According to Fairtrade Labeling Organizations International (FLO), the size of fair trade markets in Europe, North America and Japan are continuously increasing.

In order to achieve the above mentioned goals, improvement in three aspects is considered necessary, i.e., production quantity, production quality and marketing improvement.

Production Quantity

In terms of production quantity, as previously discussed, government programs such as agriculture sector improvement, water resources management and agro-industry promotion are deemed necessary.

According to a market study⁹ carried out by JICA Jordan Office, traders and retailers in Jordan and Gulf countries admitted that some Palestinian products are competitive in price and quality, and that they are willing to import such products. However, they express concerns in the continuity of supply as one of the serious obstacles.

Increased local production quantity will substitute imported products in domestic market in the short and long terms, consequently leading to continuity of supply in the export markets. In order to achieve a stable supply, although issues on movement and access cannot be neglected and need to be negotiated with governments concerned, increase in overall production quantity will be one of the most important factors. These will also benefit both producers and traders from the scale of economy.

Product Quality

It should be noted that the food processing industry in Palestine has been continuously making efforts to improve the quality of their products. Many food processing companies have already obtained quality certification from the Palestinian Standard Institute (PSI). Some have also acquired internationally

BOX 2

Results of Jordan/GCC Market Study: Voices of Traders and Retailers

Palestinian Fresh Fruits and Vegetables

● Constraints

Low price competitiveness due to high transport & labor cost, severe international competition, short shelf lives due to the lack of cold chain, unstable supply, unpredictability of delivery, limited amount of supply, product damage due to bad stacking practice, inhomogeneity of products in color and shape, risk of rejection due to damages of products, lack of organized exporters in Palestine

● Chances

Difference in production cycle (pre-season and post-season deliveries), increasing purchasing power and low domestic production in GCC countries, high quality market segment

Palestinian Processed Food Products

● Constraints

Low price competitiveness due to high transport & labor cost, unstable supply, unattractive package (design and quality), too large container size, lack of organized exporters in Palestine, lack of trade representatives in the market countries

● Chances

Increasing purchasing power and low domestic production in GCC countries, Existence of Palestinian community, Established reputation and brand names (especially in Jordan, e.g. meat products, za'tar, etc.), Reliable Halal products

⁹ 'Market Research for the Agro-industrial Park in Palestine', JICA Jordan Office, October 2008: This study was conducted to collect market data in Jordan and Gulf Cooperation Council (GCC) countries, information on trade and commerce system, and related governmental policies with regard to imports from Palestine.

recognized certificates such as the ISO 22000 and HACCP¹⁰. In agriculture, 150 GAP certified farmers¹¹ and ten certified cooperatives in the JRRV have been identified at the time of the Study, through private sector's efforts. Some farms also acquired other market-specific certificates such as British Retail Consortium (BRC), organic and fair-trade certifications. However, in both food processing industry and agriculture, these companies and farms are still rare exceptions. Currently, the efforts in quality improvement are mainly driven by private sector's initiatives. Considering that most establishments of the agro-industry in Palestine are small in size and funds, it is difficult to expect that necessary actions on quality improvement will be taken solely through their individual efforts. Hence, in order to strengthen agro-industries as a whole, increasing support, led by the PNA, is essential.

Marketing

In terms of marketing, many companies in agro-industries interviewed during the Study admitted that they neither have nor very limited resources and means for marketing, especially in export markets. As previously mentioned, increasing number of companies are putting efforts in improving their products' reliability in terms of safety, supported with internationally recognized certifications. However, from marketing point of view, safety is also a pre-requisite in exporting products. It is necessary for Palestinian companies to analyze and reflect market demands in each target country in order to further promote exporting their products. Marketing development requires a long term period with large scale investment. MoNE has been conducting enhancement of competitiveness of Palestinian enterprises with the technical assistance of United Nations Industrial Development Organization (UNIDO). In addition to this, considering the fact that most of the establishments in Palestinian agro-industries belong to SME, public sector's support in marketing in cooperation with industrial unions and organizations will be beneficial for many Palestinian companies who are willing to export their products.

(4) Legal Status of the Agro-industrial Park

The planned Agro-industrial Park may accommodate domestic enterprises that sell their products to domestic market. In this sense, it is not defined as industrial free zone where export enterprises are located but as industrial estate. The legal status of industrial estate is ambiguous in respect of its objective, incentives, and limitation. In particular, it is not clear in the current PIEFZA Law whether export enterprises in industrial estates may enjoy the same incentives (exemption of custom duties) or are subject to limitation (i.e. sales to domestic market is limited to 20 % of total sales) that are given to industrial free zone. Income tax incentives are not clearly spelled out in the current PIEFZA Law. Accordingly the PIEFZA Law should be reviewed and amended in order to make clear the legal status of industrial estates.

¹⁰ As of October 2008, six companies (three in meat processing firms, two in olive oil firms and one wheat mill) in the West Bank already obtained ISO 22000 certification which assures quality and safety, while two others have obtained HACCP.

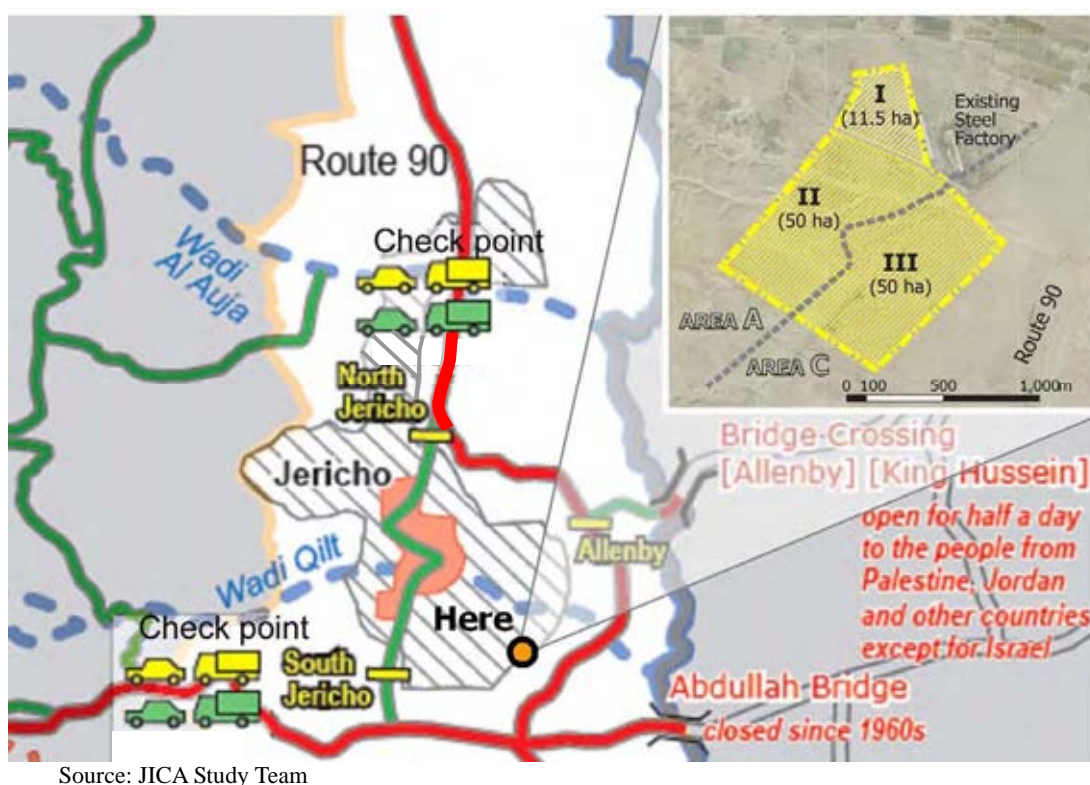
¹¹ Currently, majority of the GAP certified farmers are in contract with or supported by Palestinian NGO (PARC) or private agro business companies.

II-2 Development Scenario

(1) Development Plan

Location of Agro-industrial Park

The candidate site for the Agro-industrial Park was identified and agreed among the stakeholders during the second technical level meeting held on 25 October 2007, about two months after the completion of the Phase I study. The candidate site is located in the southern fringe of Jericho Municipality, as shown in Figure II-2-1.



Source: JICA Study Team

Figure II-2-1 Location of the Candidate Site

The site comprises three land parcels, summarized in Table II-2-1 below.

Table II-2-1 Profile of Land Parcels

Lot No.	Area	Jurisdiction	Ownership
I	11.5 ha	Area A	State-owned Land (PNA)
II	approx. 50.0 ha	Area A	Privately-owned Land (Al Hussein Family)
III	approx. 50.0 ha	Area C	Privately-owned Land (Al Hussein Family)
Total	111.5 ha		

Note: Based on the information from Ministry of Planning. Lot name I, II and III are tentative designations.

Basic Concept of Land Use

In order to create a development plan for the Agro-industrial Park, a basic concept of land use was set up as follows:

Factory, Distribution and Storage

Prior to inviting prospective tenant companies, different sizes of open plots and standard factory buildings would be offered for large and small/medium scale of tenants. Parking space for employees and visitors would be appropriately planned. Distribution and storage facilities would be ideally located near the entrances.

Infrastructure

In order to satisfy the requirements for the Agro-industrial Park, the following basic infrastructure would be constructed and maintained properly:

- Power supply facilities: Power supply line of 33 kV would be installed from the new Dead Sea power station to the Agro-industrial Park.
- Water supply facilities: Appropriate areas for water supply tanks would be allocated in lands with relatively high elevations.
- Wastewater treatment facilities: Appropriate areas would be allocated in lands with relatively low elevations.
- Solid waste treatment facilities: Appropriate areas would be allocated considering its odor and impact to the neighborhood.
- Internal roads: Major and minor road network would be arranged for smooth transportation inside the Agro-industrial Park.

BDS Center

The Agro-industrial Park in Jericho is expected to be the promotional base of agribusiness industries. Therefore, BDS Center is planned to be established in the Agro-industrial Park to support its tenant companies. In the BDS Center, business support offices, seminar rooms, an exhibition hall, and other necessary functions would be proposed.

Office Building

In order to effectively utilize common facilities in the Agro-industrial Park, locations of operation and maintenance office, security office, wholesale service (procurement of raw materials) company offices, clinic, and canteens need to be properly identified.

Green and Open Space

Greeneries and parks shall be arranged appropriately in view of well-being, improvement of workplaces, as well as fire spread prevention. The existing alignment of *Wadi* would be modified forming an artificial canal with sufficient capacity against water flow to cope with probable large-scale floods.

In order to create a land use plan, composition of industries and land sizes of factories were assumed as follows in reference to the result of investment survey (conducted in the Study Part 2) of companies:

- The factory area accommodates three priority industries consisting of business trades dealing with fresh vegetables and fruits, food processing industries and supporting industries such as packaging and ice making industries, which occupy 5 %, 90 % and 5 % respectively, of the total number of factories. The allotment of factories for the three industries was initially assumed based on the distribution ratios of sample enterprises surveyed, considering their willingness to invest in the Agro-industrial Park.
- The number of logistics and transportation facilities was assumed based on the requirements for storage/distribution in relation to production output.
- The number of wholesale service companies was initially assumed to be one for each lot.
- Land size per factory is classified into four categories, namely, i) less than 0.25 ha, ii) 0.25ha, iii) 0.5 ha, and iv) more than 0.5 ha. The classification of factory areas is initially assumed based on sample enterprises' requirement for land size per factory, obtained during the investment survey.
- Total number of factories was assumed to be 137 on the basis of the available land area for the Agro-industrial Park, and the variation of land size per factory.

The preliminary composition of type of industries and land size of factories is shown in Table II-2-2.

Table II-2-2 Number of Tenants by Type of Industries and Land Size

	Priority Industries	Area in the land use plan	Number of tenants					Ratio of number of factories
			I	II	I+II	III	I+II+III	
a)	Business dealing with fresh vegetables and fruit	Factory area	1	2	3	4	7	5%
b)	Food processing industries		12	45	57	66	123	90%
c)	Supporting industries		1	2	3	4	7	5%
Sub-total			14	49	63	74	137	100%
d)	Logistics and transportation	Distribution area	1	7	8	7	15	
e)	Trading service	Office building	1	1	2	1	3	
Total			16	57	73	82	155	
Land size per factory (floor area is 50% of Lot size per factory)	~0.25 ha/factory		2	8	10	12	22	15%
	0.25 ha/factory		7	24	31	36	67	50%
	0.5 ha/factory		4	15	19	23	42	30%
	0.5 ha~/factory		1	2	3	3	6	5%
Total			14	49	63	74	137	

Source: JICA Study Team

Note: Ratio of number of factories is estimated based on the interview survey, etc. The number of firms with more than ten employees in the food and beverages industry in the West Bank is 135. In order to achieve 90 % occupancy of tenants in the Stage I and II, 42 % of them in food and beverages industry have to move into the Park. This seems to be not realistic so that other industries such as textile and furniture have to be taken into account as priority industries.

The following facilities would be provided for each lot to serve the operations of the Agro-industrial Park:

- Power supply from JDECO
- Telecommunication line from PALTEL
- Drinkable water supply
- Wastewater collection and treatment facilities
- Solid waste collection and treatment facilities
- Major and minor internal roads with parking areas

- Standard factory building
- Other common facilities such as canteens and security office, etc.

Stage-wise Development Plan

According to the stage-wise development plan, the Agro-industrial Park shall be developed in three stages. Stage I development is provisionally scheduled to commence in 2009, starting from a relatively small scale development in the designated Area A (Lot I: 11.5 ha). This area has been secured by the PNA and is ready for development¹². Lot II which is approximately 50.0 ha shall be developed as part of stage II, upon reaching an agreement with the private land owner, while anticipating a possible large demand of investment.

The simultaneous development of stages I and II would be possible on the conditions that investment demands for lots I and II seems to be secured and sufficient, and lot II which is a privately-owned land is to be secured by the PNA. In case of simultaneous implementation of stages I and II, common utilities such as wastewater treatment facilities and solid waste treatment facilities would be integrated as one facility with the function required for stages I and II as shown in Figure II-2-3. As a result, the total cost would decrease.

Lot III for the stage III development is also privately-owned, requiring agreement with its private land owner. Since the land is located in Area C, it is supposed that stage III development would require a long lead time for special coordination/agreement on the development between the PNA and Israeli authorities.

Figure II-2-2 illustrates a schematic sequence of the stage-wise development, with notations on planning.

¹² It has been reported by the Ministry of Planning (MoP) that the state-owned land (Stage I) was secured for the Agro-industrial Park use after determination in the Cabinet meeting on 18 February 2008.

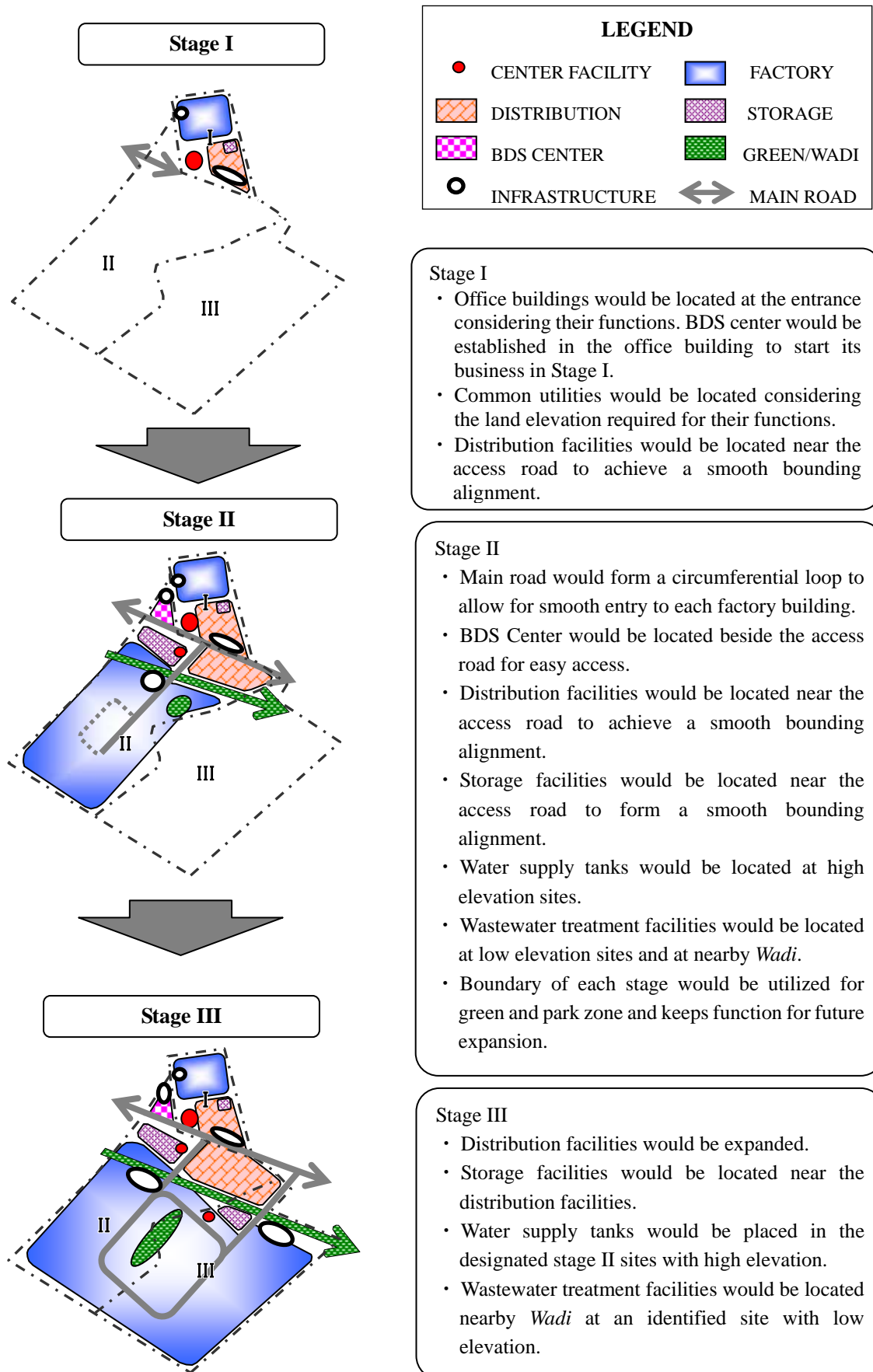
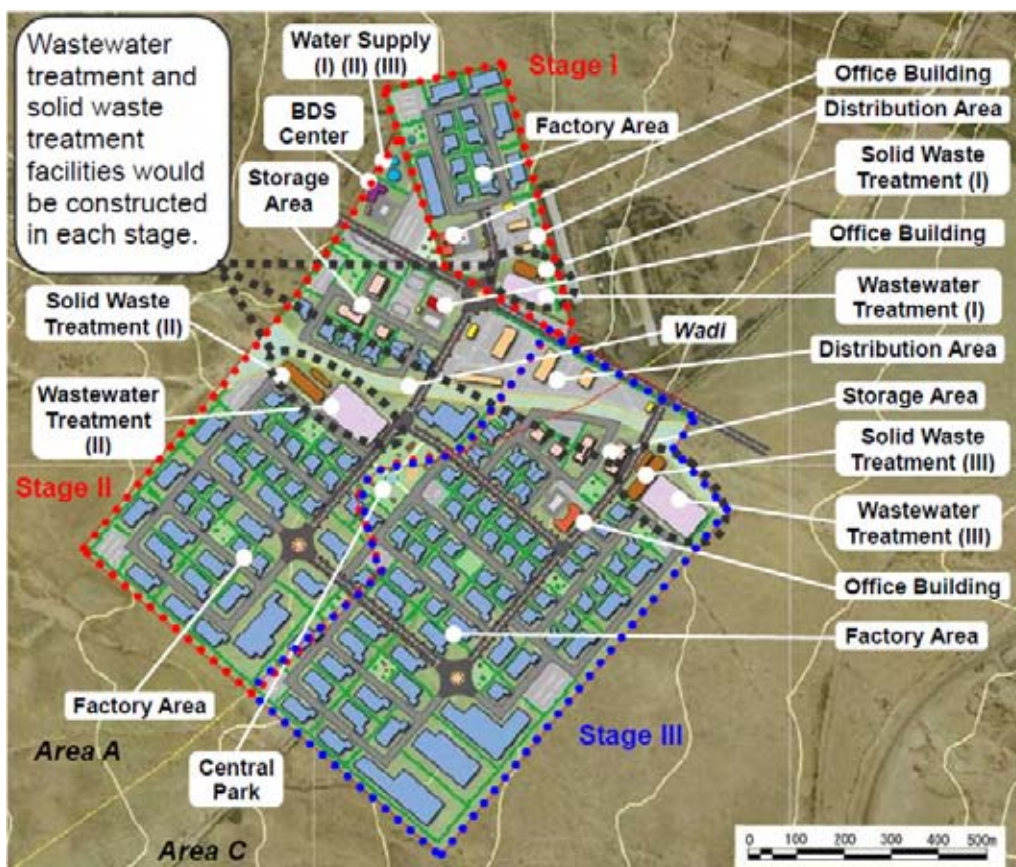
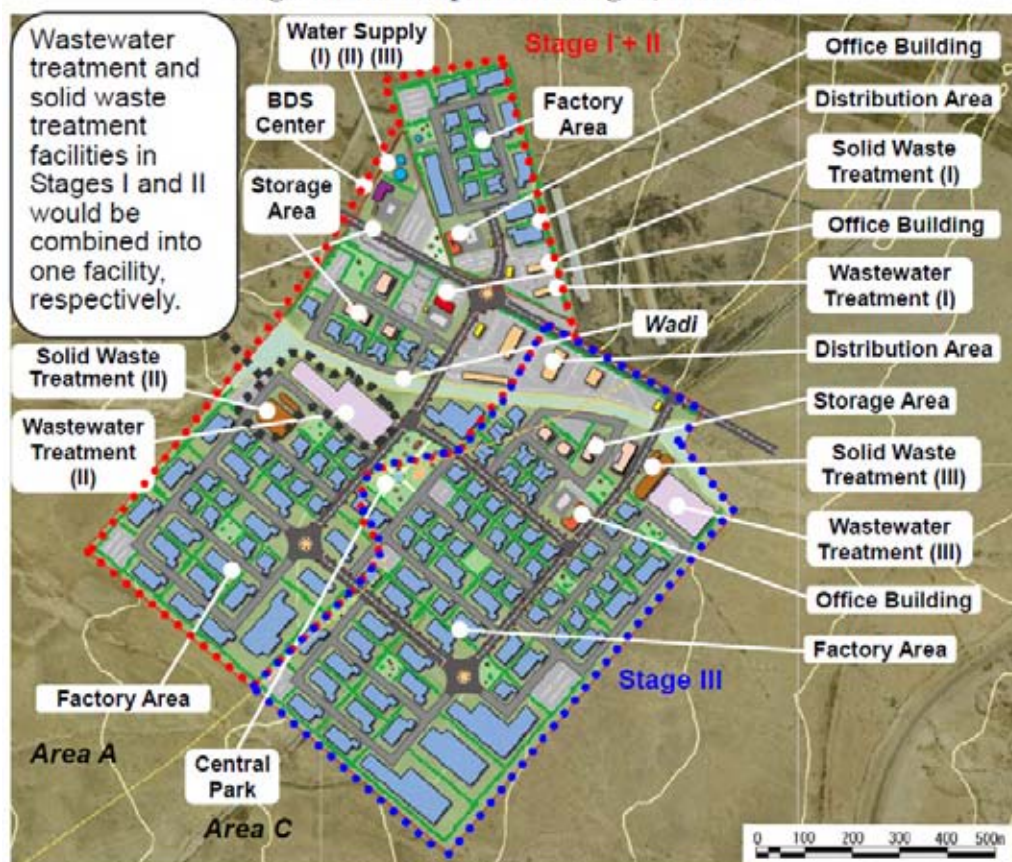


Figure II-2-2 Schematic Sequence of the Development Stages



Stage-wise Development of Stage I, II and III



Simultaneous Development of Stages (I+II) and III

Source: JICA Study Team

Figure II-2-3 Land Use Plan

Demarcation of Required Infrastructure

In order to realize the expected production activities in the Agro-industrial Park, the following infrastructures are required, which is basically divided into two categories as follows:

- Off-site infrastructure:
 - Facilities to be located outside the Agro-industrial Park, and
 - Facilities with public nature to be located inside the Agro-industrial Park.
- On-site infrastructure:
 - Facilities to be located inside the Agro-industrial Park

Accordingly, the facilities for wastewater and solid waste treatment, and the BDS Center located inside the Agro-industrial Park are categorized as off-site infrastructures since they are public in nature.

Based on the above categories, demarcation of required infrastructure is shown in Table II-2-3 below.

Table II-2-3 Demarcation of Required Infrastructure

	Category	Off-site Infrastructure	On-site Infrastructure
1	Land reclamation	-	Excavation and embankment, and <i>Wadi</i> improvement
2	Road	Road improvement/Access roads	Internal road network
3	Power supply facilities	Transmission line from the New Dead Sea Substation	Internal distribution line network with transformer
4	Telecommunication facilities	Transmission line from the closest telecommunication facility	Distribution line network
5	Water supply facilities	Transmission pipeline from water sources and water treatment facility	Water supply tanks and internal distribution pipeline network
6	Wastewater treatment facilities	Wastewater treatment facilities	Collection pipeline network of wastewater, and the redistribution pipeline network of reclaimed water
7	Solid waste treatment facilities	Solid waste treatment facilities	Vehicles for solid waste management
8	Security facilities	-	Site security systems
9	Building	BDS Center building	Rental factory, Office buildings
10	Logistics/Green/Open Space	-	Distribution area, Storage area, Parking area, Green zone and Park

Source: JICA Study Team

Development Design

On the basis of functions and facilities required for the Agro-industrial Park, off-site and on-site infrastructures are planned as summarized in tables II-2-4 and II-2-5, respectively. Corresponding land use plan meanwhile is shown in Figure II-2-3:

Table II-2-4 Off-site Infrastructure

Item		Stage I	Stage II	Initial Completion	Stage III	Total Completion
A.1	Land	1)Area required for existing roads improvement 2)Area required for water supply system 3)Area of foundation of transmission line	Area required for construction of existing road 1, 2 and A-2 with 20m in width	Stage I+II	-	Stage I+II
A.2	Existing and Access roads	1)Improvement of existing road 2 from new fruit and vegetable market to access road 1 (1.2 km) 2)Improvement of existing road 1 (3.5 km)	Improvement of existing road 1 (4.7 km), existing road 2 (1.2 km), and construction of access road A-2 (1.3 km)	Stage I+II	-	Stage I+II
A.3	Power supply facilities	Electricity from JDECO with 33 kV TL(No.1) of 4 km in length	-	Stage I only	-	Stage I only
A.4	Telecommunication facilities	Connection from PALTEL station of 3.5 km in length	-	Stage I only	-	Stage I only
A.5	Water supply facilities	Water system of Jericho municipality for main supply Mekorot Water for backup	Water from irrigation wells for main supply	Stage I+II	Water supply from Mekorot Water for additional supply	Stage I+II+III
A.6	Wastewater treatment facilities	Daily throughput: 470 m ³ /day	Daily throughput: 1,650 m ³ /day	Daily throughput: 2,120 m ³ /day	Daily throughput: 2,450 m ³ /day	Daily throughput: 4,570 m ³ /day
A.7	Solid waste treatment facilities	Equipment and facilities for composting	Same as Stage I	Stage I+II	Same as Stage I	Stage I+II+III
A.8	Building structure	Function of BDS Center in office building	BDS Center	Stage I+II	-	Stage I+II+III

Source: JICA Study Team

Table II-2-5 On-site Infrastructure

Item		Stage I	Stage II	Initial Completion	Stage III	Total Completion
B.1	Land	State-owned land 11.5 ha	Privately-owned land 50 ha	State-owned land 11.5 ha, Privately-owned land 50 ha	Privately-owned land 50 ha	State-owned land 11.5 ha, Privately-owned land 100 ha
B.2	Land reclamation	11.5 ha	50 ha	61.5 ha	50 ha	111.5 ha
B.3	Wadi improvement	-	Protection with gabion at both abutments and downstream of culvert	Stage II only	Same as Stage II	Stage II + III
B.4	Internal road	Major road:0.2 km Minor road:0.7 km	Major road: 0.9 km Minor road: 2.8 km	Major road: 1.1 km Minor road: 3.5 km	Major road:1.4 km Minor road: 3.8 km	Major road:2.5 km Minor road:7.3 km
B.5	Storm water drainage channel	Drain ditch beside roads and pipe culverts	Same as Stage I	Stage I + II	Same as Stage I	Stage I + II+III
B.6	Power distribution facilities	Distribution lines and transformer Power demand: 2.5 MW	Power demand: 10.0 MW	Power demand: 12.5 MW	Power demand: 12.5 MW	Power demand: 25.0 MW
B.7	Tele-communication distribution facilities	Connection lines to factories and public building	Same as Stage I	Stage I + II	Same as Stage I	Stage I + II+III
B.8	Water distribution facilities	0.10 MCM/year	0.40 MCM/year	0.50 MCM/year	0.50 MCM/year	1.00 MCM/year
B.9	Wastewater collection and Reclaimed water redistribution facilities	Collection pipes: 840 m Redistribution pipe: 860 m	Collection pipe: 3,600 m Redistribution pipe: 3,900 m	Collec. pipe: 4,440 m Redistribution pipe: 4,760 m	Collec. pipe: 4,100 m Redist. pipe: 4,300m	Collec. pipe: 8,540 m Redist. pipe: 9,060 m
B.10	Solid waste collection facilities	Vehicles, storage yard and container	Same as Stage I	Stage I + II	Same as Stage I	Stage I + II+III
B.11	Security facilities	Security system for detection of hazardous materials, etc.	Same as Stage I	Stage I + II	Same as Stage I	Stage I + II+III
B.12	Building structure	Rental factory Office buildings	Office buildings	Stage I + II	Office buildings	Stage I + II+III

Source: JICA Study Team

(2) BDS function of the Agro-industrial Park

Since most of the agribusiness industries in Palestine are categorized under SMEs, appropriate business support schemes which would enhance their business activities should be developed in the Agro-industrial Park to motivate them to invest.

After a series of discussions with the PNA agencies (MoP, MoNE, PIEFZA, MoA, MoH, etc.), it was generally agreed that a unique function for supporting business activities of the enterprises is worth establishing in connection with the Agro-industrial Park development. This calls for the establishment of a BDS Center, which is intended to provide various kinds of business supports such as introduction/development of business support schemes, arrangement of trainings/seminars, and provision of market information/business consulting services to tenant enterprises.

The services provided by the BDS Center would contribute to improving the business performance of the tenant enterprises in the Agro-industrial Park in terms of efficiency and profitability. Figure II-2-4 shows the potential needs of enterprises for BDS Center. The establishment of the BDS Center inside the Agro-industrial Park would be worth consideration because tenant enterprises will be able to receive the close and daily services from the Center.

In order to discuss a wide range of issues which may not be solved by the BDS Center alone and practical solutions with necessary assistance by the government, the BDS Platform chaired by MoNE is proposed to be established as an advisory committee to the BDS Center. The members of the BDS Platform would comprise concerned government agencies, business associations, NGOs (Non-profit organizations), universities, and private service providers for business support.

<Technical Support>

Supply Chain	Typical Constraints	Supporting Menu
Production /Processing	Less competitive products in the global market	Upgrading of processing/production techniques
		Upgrading of quality control
		Capacity building of labor productivity
Logistics	Inefficient distribution and lack of cold/cooling chain	Upgrading of logistical techniques
Market	Lack of skills and know-how to access the external market	Capacity building of marketing skills and know-how
		Access improvement to market information
		Capacity building of research and development skills

<Financial Support>

Mediation/introduction of financial services applicable to investment in facility and equipment, research and development, technical development, and training.

Figure II-2-4 Potential Needs of Enterprises for BDS Center

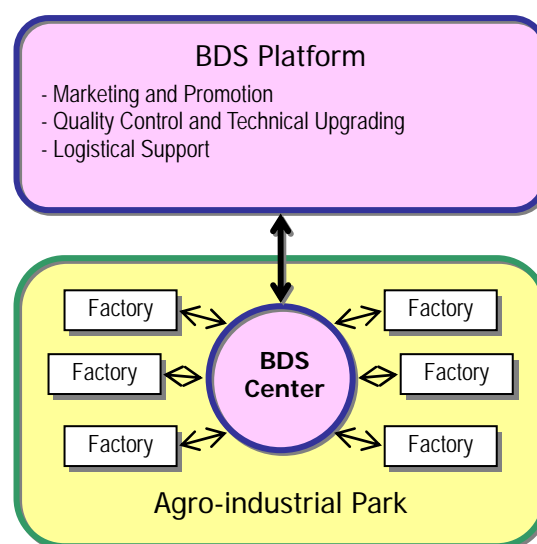


Figure II-2-5 Schematic Image of BDS Platform and BDS Office in the Agro-industrial Park

As a first step towards the mobilization of the BDS Platform and the BDS Center, three subcommittees corresponding to the possible primary services would be set up, i.e. i) marketing and promotion, ii) quality control and technical upgrading, and iii) logistical support.

The BDS Center would provide business support services not only to the tenant enterprises in the Agro-industrial Park but also to other related parties such as farmers (raw material suppliers), traders and small-sized manufacturing enterprises. Business support that will link farm producers and tenant enterprises would be required to meet the purpose of stable supply of raw materials. The BDS Center would need technical assistance in agriculture from the on-going JICA technical cooperation project aiming at enhancement of farmers' productivity in quality and quantity. The BDS Center would be expected to act as a supporting organization of the Agro-industrial Park and serve as the base of production for agro-industry as well as export terminal in the JRRV.

Expected roles of the BDS Center in the future are listed as follows:

- Introduction of business support providers including the provision of market information and business consultation
- Formulation of necessary support programs
- Facilitation of the implementation of support programs

Through the interaction between the BDS Center and the BDS Platform, a feedback system for solving problems of the tenant enterprises would be established under the cooperation between public and private sectors. This practical experience can be a good model for industrial promotion in Palestine.

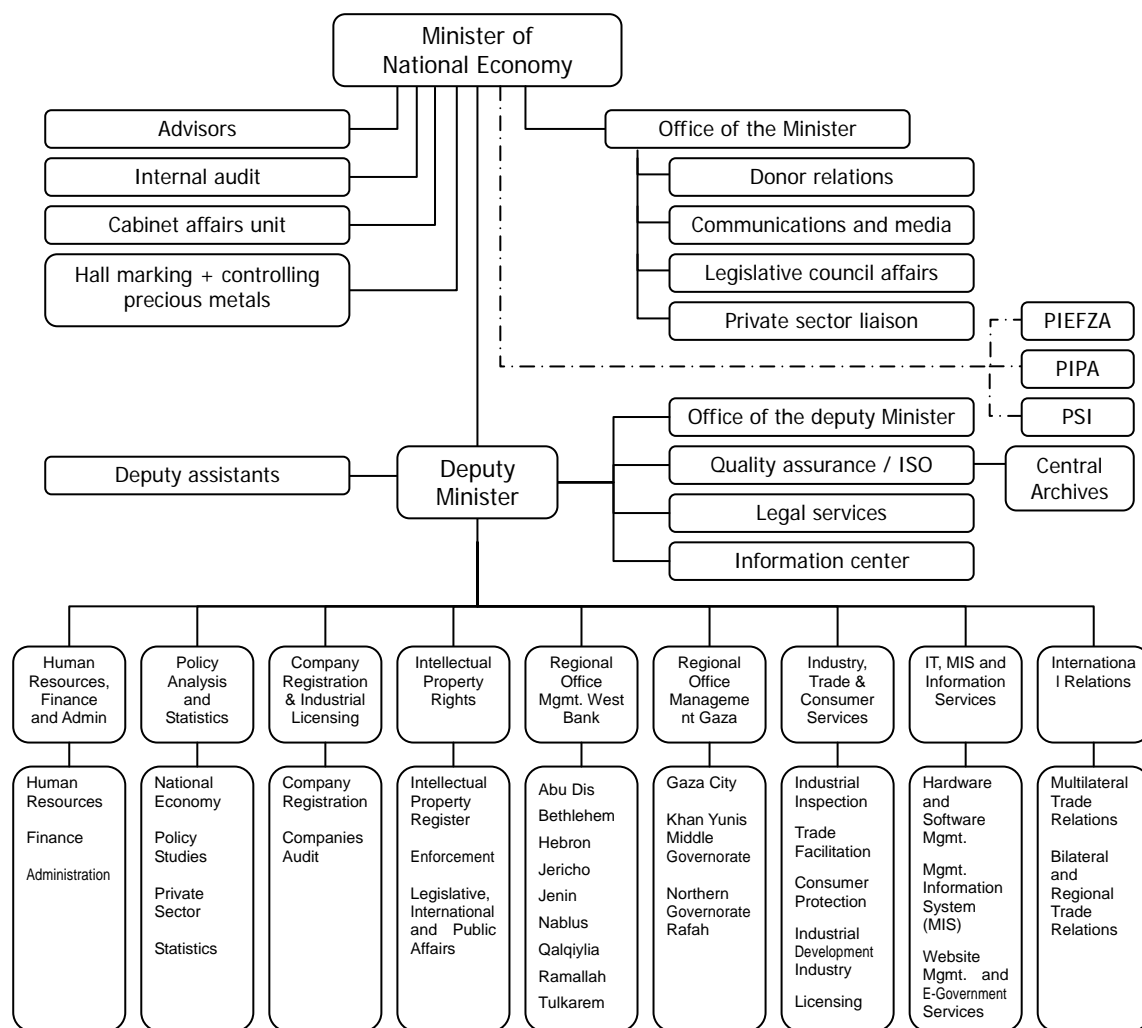
(3) Institutional Arrangements

(i) MoNE and PIEFZA's Mandate

MoNE, the higher administrative body of PIEFZA, is responsible for company registration and industrial licensing (industrial licenses for operation, etc.) for investment procedure, industrial inspection for renewal of operation license, and export certificate. The ministry, also responsible for industrial promotion, has been conducting modernization and upgrading of Palestinian enterprises in order to enhance their competitiveness, particularly the SMEs.

The following figure illustrates the present organizational structure of MoNE, in which PIEFZA is directly under the minister, acting as a functional unit in charge of industrial estate development.

The Companies Registrar is responsible for the issuance of registration certificates in accordance with the Companies Law of 1964 under the Jordanian rule which is still enforced in the West Bank. The Department of Industry, Trade and Consumer Services is responsible for a wide range of services, including industrial licensing, industrial inspection, trade facilitation, consumer protection and industrial development. The Industrial Licensing Section is the sole unit designated to issue licenses to operate, to investors in industrial estates. The Trade Facilitation Section is designated to certify the origin signed by the Chamber of Commerce, when manufacturers export products. The Industrial Inspection Section, supported by regional offices of MoNE, regularly inspects operation of the registered enterprises. The Industrial Development Section engaged in industrial promotion programs is the unit responsible for the BDS Platform.



Source: MoNE, as of June 2008

Figure II-2-6 Organization Structure of Ministry of National Economy

PIEFZA is responsible for promotion of industrial estate development in Palestine since its establishment in 1998, after the enactment of Palestinian Industrial Estates and Free Zones Law (PIEFZL). Principal missions of PIEFZA are stipulated as follows:

- Formulation of policies for industrial estates and free zones development, and preparation and permission of industrial estate development
- Application control of investment to industrial estates and free zones in Palestine
- Construction of industrial estates and free zones directly or indirectly through concessionaire to the private developer, and necessary infrastructures development
- Necessary contract administration, budget implementation, and selection of developer
- Monitoring and evaluation of the operation performance of industrial estates and free zones

PIEFZL states that PIEFZA's main role is to serve as one-stop shop where all the necessary investment information, advice, permits, licenses and official registrations for the establishment of the factories/companies will be available to (potential) investors. It also stipulates that the tasks of PIEFZA shall include development of industrial estates either directly or indirectly through a developer¹³.

¹³ Article 5.5, PIEFZL.

(ii) PIEFZA's Experience in Industrial Park Development

The Gaza Industrial Estate (GIE), the only completed industrial estate project under the PIEFZL, was developed under a concession deed granted to a private developer¹⁴. In this development, PIEFZA leases the land for 49 years to the developer. The off-site development such as water supply, storm water and stand-by power, and the on-site development were implemented under the responsibility of PIEFZA with financial assistance from the United States Agency for International Development (USAID) and the International Finance Corporation (IFC). According to the World Bank project evaluation^{15 16}, the following description typically shows the latest performance of GIE:

- It was expected at the time of the project appraisal that 264,000 m² (for 334 enterprises) would be occupied by 2005. However, the actual occupied area in 2005 was only 32,000 m² (for 20 enterprises).
- It was estimated at the time of the project appraisal that 16,000 persons would be employed in GIE by 2005. However, the actual number of employees in 2005 was only 1,060.

Due to unstable social and political situations in Gaza over the last decade, GIE has failed to attract the expected number of private investors.

As of March 2009, After GIE, PIEFZA coped with the Jenin Industrial Estate (JIE)¹⁷, the Hebron IT Park¹⁸ and the Tarkumiya Industrial Estate¹⁹, which were planned but remain uncompleted due to constraints such as financial arrangement, land procurement, social and political instability. The Bethlehem Multi-disciplinary Industrial Estate (BMIP)²⁰ and the Jericho Agro-industrial Park are their relatively recent development projects.

In the case of the JIE, PIEFZA will be responsible for the off-site infrastructure development, such as water supply, power supply, wastewater treatment, access roads, while the on-site development will be under a concession provided to the private developer as in the case of GIE.

(iii) Institutional Arrangements sought for the Jericho Agro-industrial Park Project

PIEFZA either can directly develop and operate or can become an umbrella body for development and operation entity. Considering its current status, the capacity strengthening in terms of human and financial resources would be a prerequisite condition for the project implementation.

PIEFZA will perform related administrative tasks to coordinate various inter-organizational issues and to supervise the project development and management (see section V-1). The administrative capacity strengthening of PIEFZA will also be essential.

¹⁴ Palestine Industrial Estates Development Company (PIEDCO)

¹⁵ "Implementation Completion Report (TF-26048 TF-26089) on a proposed trust fund credit in the amount of USD 10 million to the West Bank and Gaza for the Gaza Industrial Estate Project", 19 December 2005.

¹⁶ An analysis on major factors affecting implementation and outcome was made in the ICR. It is mentioned in the ICR, in addition to the external factors such as political uncertainty, cyclic violence and closure after the *Intifada* in 2000, as the internal factors, PIEFZA was in difficult circumstances (unclear policy guidance from the government, inadequate financial and institutional support or independence).

¹⁷ A private development company, Northern International and Industrial Co. (NIIC) was given the development concession. It is reported that financial assistance will be extended by KfW.

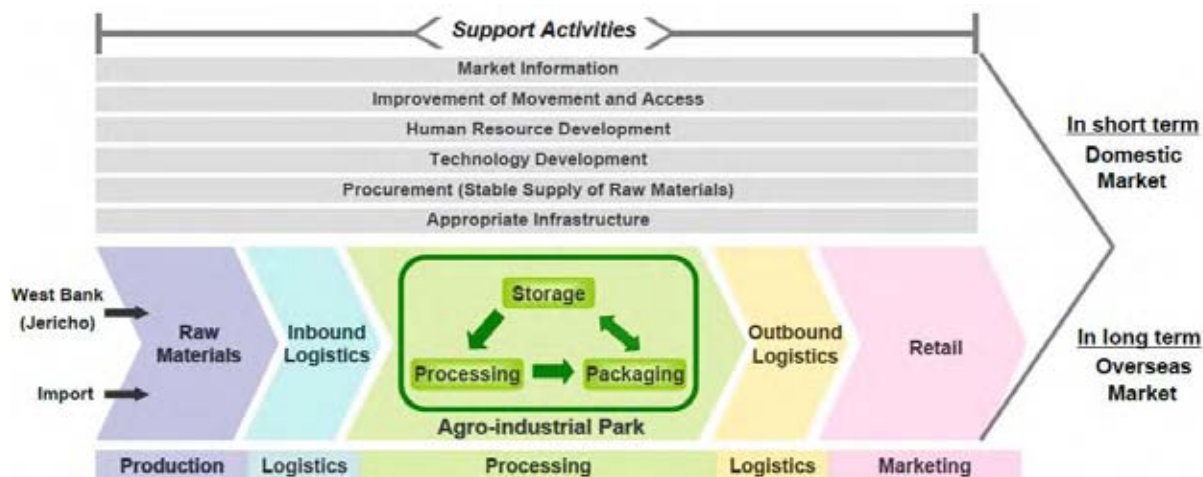
¹⁸ A feasibility study was done through the support of the Turkish government, while the project has been suspended.

¹⁹ It is reported that the Turkish private sector is undertaking the feasibility study through the support of the Turkish government; however, the project is suspended since the candidate site is located in Area C.

²⁰ BMIP is the most recent industrial estate development planned. The French President expressed an official commitment during his visit to Bethlehem in June 2008.

II-3 Values of the Agro-industrial Park

The planned Agro-industrial Park is expected to play the role of a “production base” in the JRRV as well as an export terminal to Jordan and other Gulf countries. However, in order to achieve the future goals in the JRRV i.e., improvement in agriculture, promotion of agro-industry and enhancement of competitiveness of Palestinian export industries, specific support activities need to be included in the functions of the Agro-industrial Park. The following diagram illustrates necessary support activities to be initiated by the Agro-industrial Park, in terms of establishment of supply chain for agro-industry.



Source: JICA Study Team

Figure II-3 Supply Chain of the Agro-industry by the Establishment of the Agro-industrial Park

The following support activities of the Agro-industrial Park would contribute to the enhancement of its values as a production base for agro-industry as well as an export terminal to overseas market:

- 1) Provision of appropriate infrastructure to tenant enterprises
- 2) Joint procurement of raw materials to decrease the procurement costs
- 3) Collective shipment of products from the Agro-industrial Park for transport cost efficiency of tenant enterprises
- 4) Implementation of technical assistance for upgrading applied technologies and market developing products
- 5) Completion of all production processes, i.e. processing, packaging and storing inside the Agro-industrial Park
- 6) Provision of common facilities such as warehouse and distribution center
- 7) Carry out appropriate trainings to tenant enterprises for their human resource development
- 8) Facilitation for movement and access for commuting employees and cargo transportation to and from the Agro-industrial Park
- 9) Provision of overseas market information considering the seasonal advantage of fresh vegetables and fruits in the JRRV.

As discussed in section II-1, many Palestinian enterprises, categorized as SMEs, lack marketing, advancement in technology and management capabilities. Thus, their products remain uncompetitive in terms of cost and quality in export markets. Since their movements are also constrained, they suffer from delay in delivery, high transportation costs and consequently damaged raw materials. In order to overcome these problems and constraints, the Agro-industrial Park is expected to provide tenants with various support services to make their business smoothly, in line with the supply chain from procurement of raw materials to sale of products, as shown in Figure II-3.

Raw Materials Procurement System

Stable supply of high quality and safe raw materials to the Agro-industrial Park will be vital for tenant enterprises. Procurement methods for raw materials that would render better services and conditions to the tenants should be considered:

- a) A joint procurement system of raw materials for SMEs
- b) Procurement methods according to kind of raw materials (cold chain, fresh vegetables and fruits)
- c) Procurement of high value-added fresh vegetables and fruits from GAP farmers

A joint procurement of raw materials is a collective procurement system for SMEs who purchase raw materials individually. This system would render cost effective procurement services to purchasers. Stakeholders undertaking collective procurement services would include cooperatives established by tenants or wholesalers outside the Agro-industrial Park.

Procurement methods of raw materials vary depending on the kinds of raw materials and location of purchase. Processed meat enterprises may need a cold chain system from the ports of arrival (i.e. Ashdod Port), where meat are imported to the Agro-industrial Park. Currently the back-to-back system at commercial terminals would impede a cold chain system. For instance, meat (beef) imported from Brazil or Australia which arrive at the Ashdod Port is then transported to the West Bank through the Betunia commercial terminal. The Agro-industrial Park would contract the known/trusted delivery service companies for transportation of meat preserved in a cold chain system in order to minimize time for the back-to-back process at commercial terminals.

Traders dealing with fresh vegetables and fruits in the Agro-industrial Park may need to have contracts with farmers holding GAP certificates in order to secure a stable supply of high value-added agricultural products from farmers. There exist only three companies in the West Bank. Two of them, located in the JRRV, adopt either a farm sharing system where they have contracts with a group of GAP farmers managing greenhouses, or a direct contract with individual GAP farmers. A farm sharing system is intended to reduce costs required to acquire GAP certificates. The number of GAP holding farmers is reported to be about 150 in the JRRV. Business dealing with fresh vegetables and fruits in the Agro-industrial Park will require additional GAP farmers to export high value-added fresh fruits and vegetables. PARC is currently the main organization of fostering GAP farmers. The proposed BDS may assist such business tenants in consultation for identification of GAP farmers or fostering of potential farmers who would hold GAP certificates.

Marketing

Palestinian enterprises have very limited resources and means for marketing. Palestine has neither association nor trading company in the export of manufactured goods. For fresh fruits and vegetables, Jordan has already established an association where more than 100 framers/exporters are registered as members. This association regularly contacts European buyers in order to collect market information about fresh fruits and vegetables to be sold in European market. A similar function could be introduced inside the Agro-industrial Park, which the PNA (MoNE and MoA) is recommended to introduce such services to facilitate export of high value-added fresh fruits and vegetables.

II-4 Economic Effects of the Agro-industrial Park

This section discusses related effects of the Agro-industrial Park development to the Palestinian economy. Economic effects include i) incremental added value contributing to the Palestinian economy in monetary terms, and ii) employment creation.

Added value refers to the value generated at a particular stage of production of goods, and calculated as remaining value after intermediate consumption is subtracted from the annual output. Since added value is further divided into capital cost, labor cost and taxes, this section presents estimates of the increase in added value first, and then the increase in labor cost and taxes in more detail.

The employment creation effect inside the Agro-industrial Park accounts for incremental job opportunities in tenant factories in the Agro-industrial Park. Incremental rate is assumed to be 80% of the employment creation. It is calculated based on total floor area available for the tenant companies, tenant occupancy ratio (90%), and the number of employees per floor area (200 employees/ha), which is estimated based on the results of the investment survey.

Economic effects are to be generated inside (direct effects) and outside (indirect effects) the Agro-industrial Park. Since the Agro-industrial Park has business linkages with stakeholders from the outside who are dealing with goods, services, trade and transportation, both the incremental added value and employment creation are estimated as indirect effects (detailed methodology and assumption used for estimating economic effects are shown in “Annex C: Economic Effects of the Agro-industrial Park”).

(1) Increase in the Added Value

Total value of output (sales) amount inside the Agro-industrial Park up to stage II is estimated to be USD 72.5 million per year. Around USD 18.7 million and USD 29.5 million of the total is estimated as added value from direct and indirect effects, respectively.

Total economic effects (total added value inside and outside the Agro-industrial Park) to the Palestinian economy is estimated to be USD 48.2 million, which is equivalent to 0.8% of the gross domestic product (GDP) of Palestine in 2007 (USD 6,009 million).

Table II-4-1 Output and Added Value inside and outside the Agro-industrial Park

(Unit: USD 1,000/year)

	Stage I	Stage I + II	Stage I + II + III	Total
Value of Output within the Agro-industrial Park	14,600	72,500	161,200	161,200
Added Value (Economic Effect)	9,700	48,200	107,300	107,300
Added Value inside the Agro-industrial Park	3,800	18,700	41,600	41,600
Added Value outside the Agro-industrial Park	5,900	29,500	65,700	65,700

Source: JICA Study Team

Note: Above values are rounded to the nearest 100,000, and thus total values are not necessarily the same to the sum of each value.

Added value is further estimated in more detail as the increase in workers' compensation (salaries, wages and other cash) and tax revenues per stage.

Increase in Worker's Compensation

The total additional worker's compensation inside and outside the Agro-industrial Park on a full stage is estimated to be USD 12.5 million and USD 2.9 million per annum, respectively. Compensation of employees in the agricultural sector outside the Agro-industrial Park includes only estimated compensation for agricultural labor, excluding operating surplus of household engaged in agriculture. Thus, the actual worker's compensation in the agricultural sector outside the Agro-industrial Park is anticipated to be more than the estimated value.

Table II-4-2 Total Worker's Compensation (Unit: USD 1,000/year)

	Stage I	Stage II	Stage III	Total
Total Workers Compensation per Annum	1,390	5,540	8,490	15,420
Workers Compensation inside the Agro-industrial Park	1,130	4,480	6,870	12,480
Workers Compensation outside the Agro-industrial Park	270	1,050	1,620	2,930

Source: JICA Study Team

Note: Above values are rounded to the nearest 10,000, and thus total values are not necessarily the same to the sum of each value.

Increase in Tax Revenue

The estimated annual government tax revenue generated from the operations inside the Agro-industrial Park in a full stage is USD 3.78 million per annum, which consists of USD 1.78 million from value-added tax, USD 1.53 million from corporate tax (this tax revenue is estimated taking into account tax exemption/reduction applied to tenants), USD 0.20 million from custom duties on imported materials/products, and USD 0.26 million from other taxes and fees (e.g. vehicle license fees, building taxes, official stamp fees, and entity license fees). In addition, USD 1.00 million per annum of tax revenue will be additionally collected outside the Agro-industrial Park.

Table II-4-3 Annual Tax Revenue Inducement inside and outside the Agro-industrial Park

(Unit: USD 1,000)

Stage	Stage I	Stage II	Stage III	Total
Tax Revenue form Inside the Agro-industrial Park	340	1,360	2,080	3,780
Custom Duties	20	70	110	200
Value Added Taxes	160	640	980	1,780
Corporate Taxes	140	550	840	1,530
Other Taxes and Fees	20	90	150	260
Tax Revenue from Outside the Agro-industrial Park	90	360	550	1,000
Total Tax Revenue of the PNA	430	1,720	2,630	4,780

Source: JICA Study Team

Note: Above values are rounded to the nearest 100,000, and thus total values are not necessarily same to sum of each value.

(2) Employment Creation

The Agro-industrial Park (stage I to III) is expected to create about 7,850 additional employment in Palestine, of which additional direct employment (factory workers) inside the park is estimated to be 3,790²¹. Indirect employment for the agricultural sector outside the Agro-industrial Park is estimated to be about 3,040.

²¹ The number of employees inside the Agro-industrial Park as an additional direct employment (3,790) is calculated by multiplying the number of factories' employees (200 per ha), total floor area (26.33 ha), estimated in Chapter III, with tenant occupancy ratio (90%) and incremental job creation ratio (80%). Direct employment in the Agro-industrial Park includes employees in the tenant factories, but does not include workers and employees in distribution center, BDS center, and office building.

Indirect employment for the internal trade and transportation sector outside the Agro-industrial Park is estimated as 490, while that in other sectors is estimated as 530.

Palestinian Central Bureau of Statistics estimated the labor force of Palestine in the year 2006 as 872,000^{*22}. Out of which, 206,000 or 23.6 % were identified as unemployed. Direct and indirect employment in the Agro-industrial Park is expected to reduce the current unemployment by about 3.8% and a corresponding ratio of 0.9 % (from current level of 23.6 % to 22.7 %).

Table II-4-4 Employment Effects

	Stage I	Stage II	Stage III	Total
Employment (no. of employees)	710	2,820	4,320	7,850
Inside the Agro-industrial Park (direct employment)	340	1,360	2,090	3,790
Outside the Agro-industrial Park (indirect employment)	370	1,460	2,240	4,060
Agricultural Sector	280	1,090	1,670	3,040
Internal Trade & Transportation Sector	40	180	270	490
Other Sectors	50	190	290	530

Source: JICA Study Team

Note: Above values are rounded to the nearest 10, and thus total values are not necessarily the same to the sum of each value.

(3) Perspective for Labor Force Mobilization

On the basis of effects on employment mentioned above, 3,790 new employees need to be mobilized from stage I to III, inside the Agro-industrial Park. In table II-4-5, population of new employment indicates those who are either currently underemployed²³ or unemployed²⁴.

Jericho Governorate is one of the most potential areas where labor force for the Agro-industrial Park would be sourced. Employees can be mobilized not only from Jericho City alone but also from other areas in the Jericho Governorate as well such as Al Jiftlik and Fasayil. It is realized that the Agro-industrial Park could face difficulty in mobilizing a sufficient number of employees if sourced only from Jericho Governorate, in which the total number of the underemployed and unemployed people is estimated to be around 1,900 as of 2007, accounting for only 54% of the required number of employees. This is marginally higher to cover about 1,700 employees required for stages I and II (see Table II-4-4). Moreover, not all of the 1,900 labor force is expected to be mobilized. In this regard, it is unrealistic to assume mobilization of all the underemployed and unemployed people sourced only from Jericho Governorate. Thus, mobilizing labor force from outside Jericho Governorate is also essential to secure employment operations in the Agro-industrial Park.

Table II-4-5 Labor Force Participation of Jericho Governorate in 2007

	(Number)
Population	41,724
Persons aged 15 years and over	22,602
In the Labor Force (Economically Active Population)	11,007
Employed	9,114
Underemployed	814
Unemployed	1,079
Outside Labor Force (Economically Inactive Population)	11,595
Persons aged under 15 years	19,122

Source: JICA Study Team, based on the data from PCBS

²² Labor force (economically active population) is estimated as the difference between the population aged 15 and over (2,111,000) and the economically inactive rate (1,239,000).

²³ Underemployed is defined as the situation where "a person's employment is inadequate in relation to alternative employment, account being taken of his/her occupational skills". (PCBS)

²⁴ Unemployed is defined as the situation where "individuals 15 years and over who did not work at all...., who were not absent from a job and were available for work and actively seeking a job..."(PCBS)

According to the Office of the Coordination of Humanitarian Affairs (OCHA) in Palestine, the possible areas where commuters travel to and from the Agro-industrial Park would be the whole Tubas Governorate, east areas of Nablus Governorate (Talluza, Al Badhan, An Nassariya, Beit Hassan, Nablus, and Furush Beit Dajan) and east area of Ramallah Governorate (Deir Jarir, At Tayba, Rammun, Deir Dibwan, Burqa). These are shown in Figure II-4. There are four existing checkpoints (Taysir, Hamra, Ma'ale Efrayim and Yitav) prior to entry to JRRV. Palestinians are allowed to pass through two checkpoints (Taysir and Hamra) to access JRRV. They then pass either through Ma'ale Efrayim and Yitav or Route 90 to reach Jericho City. People from Ramallah are allowed to pass through Jericho DCL to enter Jericho City, however, once inside the city, they are not allowed to leave through Jericho DCL, except those bearing East Jerusalem ID.

Local people outside the JRRV can pass through checkpoints on foot, or by public transportation. When they use private cars to travel to the JRRV, they have to take a long detour via Route 1 or 90.

(4) Economic Analysis

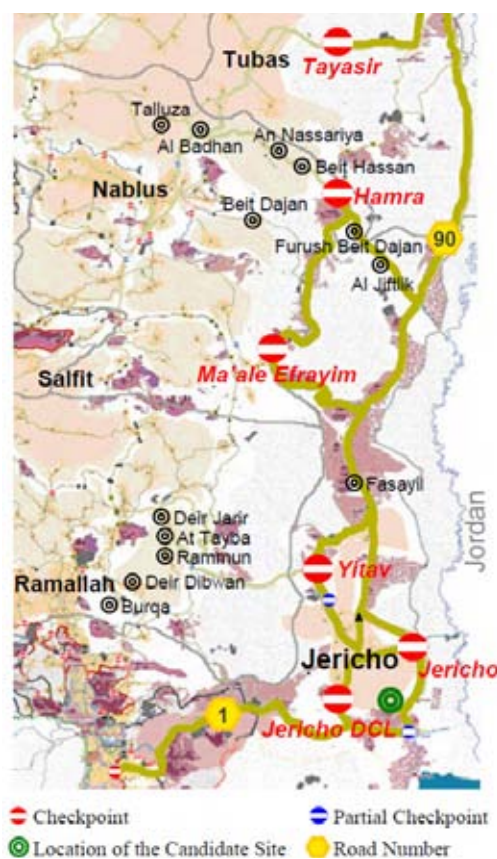
1) General Assumption

Economic analysis was made for the Agro-industrial Park development project in the case of the simultaneous development of stages I and II. The objective of said analysis is to evaluate the feasibility of the Agro-industrial Park development project from the viewpoint of national economy.

In order to evaluate the economic feasibility of the Agro-industrial Park development project, the Economic Internal Rate of Return (EIRR) was estimated based on the following assumptions: i) all revenues and costs were expressed in US Dollars at 2008 constant price; ii) project is assumed to be implemented from 2009 and will be completed by the end of 2012, iii) operating period is assumed to be 20 years after the completion of the projects (from 2013 to 2022), iv) tax, price contingencies, interest rates during construction, and other financial cost considerations were excluded from the project costs; and v) depreciation and debt servicing were excluded from operation costs.

2) Economic Cost of the Project

In the economic analysis of the Agro-industrial Park development project, all costs related to the development of the Agro-industrial Park need to be taken into account. Project costs for the Agro-industrial Park development subject to economic analysis include not only the cost of off-site and on-site infrastructures, but also capital investment of its tenant enterprises.



Source: JICA Study Team, based on "West Bank & Gaza Strip Closure Maps April 2008" by OCHA

Figure II-4 Closure Map on Access to Jericho

Project costs for economic analysis consists of 1) capital cost of on-site and off-site infrastructure cost, 2) operation and maintenance cost of on-site and off-site infrastructure, 3) investment of tenant enterprises.

Then tax and price contingency were excluded from the project costs and its local currency portion estimated at factor cost was converted to approximate the economic cost. This was carried out by applying a standard conversion factor of 1.0 which is commonly applied for economic analysis in Palestine. Operation and maintenance costs of on-site and off-site infrastructures were also adjusted in the same way to estimate the economic costs.

Capital investment cost is approximated based on the estimated number of employees and average capital investment per employee (US\$ 75,500 per employee for agro-industries & food processing industries, US\$ 81,900 per employee for packaging industries, and US\$ 55,400 per employee for others ^{*25}).

The number of employees and capital investment of tenants are estimated in the following table, based on the estimated employees in the Agro-industrial Park as presented in the chapter II, and occupancy ratios (1st year: 30%, 2nd year: 50%, 3rd year: 70%, and 4th year onwards: 90%).

Table II-4-6 Estimated Capital Investment by Tenants

		Additional No. of Employees		Capital Investment by Tenants (US\$ 1,000 per year)	
		1 st year	2 nd – 4 th year	1 st year	2 nd – 4 th year
Tenant Factories	Agribusiness	671	448	35,378	23,586
	Food Processing	35	24	2,049	1,366
	Packaging Service	189	126	6,192	4,128
Others *		69	46	43,620	29,080
Total		965	643	35,378	23,586

* Note: Others consists of such as logistics and transportation companies, trading companies, BDS Center, and Supporting Staff

Source: JICA Study Team

3) Economic Benefit of the Project

The Agro-industrial Park would generate demand for labor force as well as goods and services in the form of production inputs and consumer goods. Demand for transportation and storage services also increases. The effects of the Agro-industrial Park development project on the national economy would lead to significant multiplier effects throughout the local, regional and national economies. On the benefit side, increase in the value added resulting from the development of the Agro-industrial Park is considered as economic benefits of the project.

Value added generated within the Agro-industrial Park through the production of tenant factories is estimated to be US\$ 18,700 million per year at 90% occupation ratio (please refer to Table II-4-1). Furthermore, value added generated outside the Agro-industrial Park through the production of tenant factories (indirect effects) are estimated to be US\$ 29,500 million per year²⁶ at 90% occupation ratio (please refer to Table II-4-1).

²⁵ Since reliable data in Palestine is not available, actual data in the industrial estates in Jordan is adopted. The data for agro-industries & food processing industries (US\$ 52,700 per employee) and for packaging industries are quoted from the Abdullah II Ibn Al-Hussein Industrial Estate (Food Industry: invested capital= 193.22 million JD, number of employees= 2,600, Packing & Packaging Industries: invested capital= 154.64 million JD, number of employees= 1,891, @ US\$ 1.0= 0.709 JD). As to the other industries (such as logistics, trading company, etc.), average invested capital per employee of all the industrial estate in Jordan is adopted (invested capital= 1,077.9 million JD, number of employees= 31,785).

²⁶ The ratio of in-direct effect to direct effect (multiplier coefficient) estimated by JICA Study Team is 1.57 (US\$ 29,390 mil. ÷ US\$ 18,705 million). Such multiplier coefficient is similar to the multiplier coefficient of 1.5, which is adopted by the feasibility study on the other industrial estates in Palestine (such as Gaza Industrial Estate, Jenin Industrial Estate, Nablus Industrial Estate, and Tulkarem Khadoury Technology Development Center).

4) Result of Economic Analysis

The EIRR was calculated to be 15.8% in the case of the simultaneous development of stages I and II. The estimated EIRR is well higher than the economic opportunity cost of capital of 12%, which is commonly used for economic analysis. Thus the project is judged to be a worthwhile implementation from the view point of national economy. At a 12% discounted rate, the Agro-industrial Park development project generates economic net present value (ENPV) of US\$ 37.7 million.

A sensitivity analysis was also performed for EIRR and ENPV in order to evaluate the economic viability of the Agro-industrial development project. A switching value analysis was also carried out to test the economic viability of the Agro-industrial Park development project in order to estimate the extent the costs and benefits which can be allowed to increase or decrease, respectively.

Table II-4-7 Summary of Results of the Economic Analysis

	EIRR	NPV	Switching Value
Base Case	15.8%	US\$ 37.7 million	-
a) Capital Cost +15%	14.6%	US\$ 27.4 million	+54.6%
b) Direct Economic Benefit -15%	12.9%	US\$ 8.5 million	-19.4%
c) In-direct Economic Benefit -15%	14.0%	US\$ 19.8 million	-31.6%

Source: JICA Study Team

As shown in the above table, the sensitivity analysis indicates that the economic viability of the proposed Agro-industrial Park projects is robust under various adverse assumptions. For example, when overrun of capital cost is within the range of 55% and the decrease in the direct (indirect) economic benefit is within minus 19% (32%), the project sustains its economic viability as a base case.

5) EIRRs of stage I only and stage wise development (stage I, stage II)

EIRR was also estimated for both stage I only and stage wise development (stage I, stage II). It was estimated to be 14.3% (base case) in the case of stage wise development. Sensitivity analysis was also executed to test the economic viability of the Agro-industrial Park development project in order to estimate the extent of costs and benefits which can be allowed to increase or decrease, respectively. The project would remain viable with 17% increase in capital costs, 31% decrease in direct benefits and 70 % decrease in indirect benefits.

EIRR was estimated to be 11.2% (base case) in the case of stage I only. The result reveals that implementation of only stage I will not sustain the economic viability of the project.

II-5 Environmental and Social Considerations

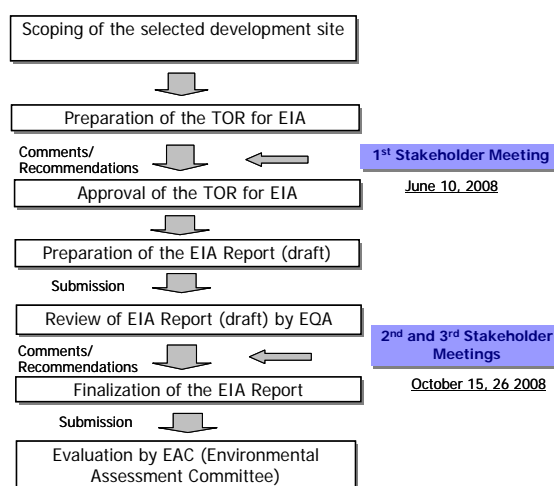
(1) Basic Policy for Environmental and Social Considerations

JICA has a policy to assist on environmental and social considerations (ESC) for host countries when cooperation projects are implemented, and to secure stakeholders participation during the planning phase of the projects. This is based on the “JICA Guidelines for Environmental and Social Consideration (the JICA Guideline)” issued on 1 April 2004. Depending on the magnitude of impacts on environmental and social aspects, JICA Study Team conducts studies on environmental and social considerations, and analyzes alternatives including the case of “zero option in which the Agro-industrial Park development project is not implemented”.

According to “Palestinian Environmental Assessment Policy”, industrial estate projects are among the fourteen types of development projects that require EIA. Although PIEFZA was supposed to be responsible for EIA, it was executed as part of the feasibility study in the course of the Study Part 2 and 3. Based on the policy mentioned above, ESC assistance is provided in conducting EIA, in accordance with the Palestinian environmental guidelines and regulations during the study period.

Prior to the Phase II study, a preliminary ESC study was conducted in the previous Phase I study in April-July, 2007. The major works in the preliminary ESC study included provisional scoping, environmental survey and preparation of the draft terms of reference (TOR) for EIA. During the Phase I study, the site location for the Agro-industrial Park was not determined. Site location was finally selected in the Part 1 of Phase II study (February 2008).

The workflow of the ESC study and stakeholders meeting in Phase II (Part 2 and Part 3) is summarized in Figure II-5-1.



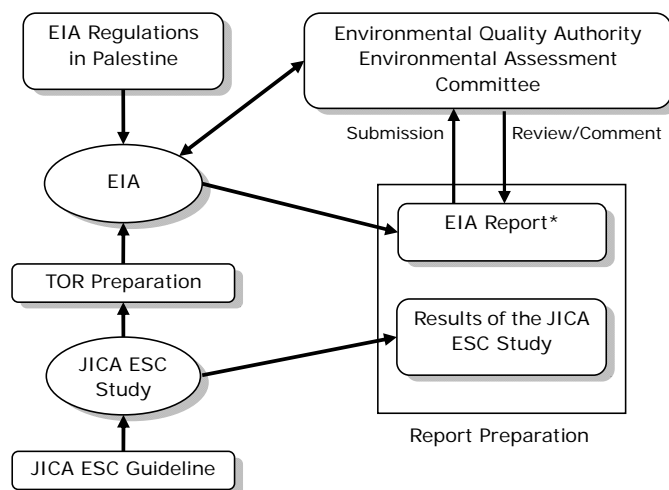
Source: JICA Study Team

Figure II-5-1 Workflow of the ESC Study and Stakeholder Meeting

(2) Framework of EIA for the Agro-industrial Park

As previously mentioned, a full-scale EIA was required for the Study under the Palestinian Environmental Assessment Policy, which was approved by the Ministerial Council in its resolution No: 27-23/4/2000 dated 23 April 2000. The overall assistance provided for EIA under the Study is illustrated in Figure II-5-2. JICA Study Team assists the project proponent, PIEFZA, in preparing a TOR for EIA in accordance with the requirement of the EIA guidelines. Under the JICA Guidelines, JICA Study Team conducts the ESC study including data and information collection, site survey, analysis of environmental and socio-economic conditions, identification of anticipated impacts caused by the project, determining mitigation measures, and preparation of the environmental monitoring and management plan (EMMP). JICA Study Team also provides technical assistance for the enforcement of EIA in Palestine.

Assistance of EIA under the ESC Study, areas for EIA application, and facilities and infrastructures subject to EIA are summarized and illustrated in Figures II-5-2, II-5-3, and II-5-4 respectively. Any changes initiated for the components of the infrastructure, in terms of design and implementation methods that might conceive negative impacts related to ESC, will necessitate updating of the previous EIA report, subject to assessment and approval of the Environmental Assessment Committee (EAC) before the implementation of the project.



* EIA Report is attached to the JICA Report as Annex.

Figure II-5-2 Procedure of EIA Report Preparation

During the ESC study, JICA Study Team prepared a draft EIA report in cooperation with PIEFZA and submitted it to EQA for preliminary review of it by EQA. Then the EIA report is to be finalized by the PIEFZA after EAC reviews and approves it. If necessary, finalization of the EIA report would be assisted by the Study Team.

- The construction areas of the Agro-industrial Park development project and the adjacent areas.
- The range of positive and negative impacts due to operation of the factories and on-site and off-site related facilities.
- The area with access traffic facilities to the Agro-industrial Park (Cargo access road)
- The area affected by the Agro-industrial Park development project.
- The area for development alternatives.

Source: JICA Study Team

Figure II-5-3 Areas for EIA Application

<p>a) On-site infrastructure development</p> <ul style="list-style-type: none"> - Land - Land preparation work (Reclamation and grading) - <i>Wadi</i> development - Internal Road - Drainage - Water supply facility - Power supply - Wastewater network facility - Solid waste collection system - Telecommunication system - Security system - Green space and park - Logistic and center facility - Standard factory (Building) 	<p>b) Off-site infrastructure development</p> <ul style="list-style-type: none"> - Land acquisition - Access road - Power supply - Water supply - Wastewater treatment facility - Solid waste management - Telecommunication network system
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Source: JICA Study Team

Figure II-5-4 Facilities and Infrastructures Subject to EIA

(3) Scoping for EIA

Location of the development site for the Agro-industrial Park was finally selected during the Part 1 of the Phase II study. Detailed scoping for the selected site was conducted at the beginning of the Part 2 of Phase II study by reviewing the provisional scoping prepared in the Phase I study. This was performed with reference to the existing and collected data and information related to the environmental and social factors. The comments raised by participants during the 1st stakeholders meeting held on 10 June 2008 were also reflected into the scoping of the EIA study. Result of scoping was tabulated in a matrix form presented in Attachment 2 of the EIA Report attached as Annex B.

(4) Legal and Administrative Framework

Relevant laws and regulations such as Palestine Environmental Law, Palestinian Environmental Assessment Policy, Industrial Estates and Industrial Free Zones Law, other water related laws and regulations are explained in the EIA report. Present situation of the public and private sectors related to the project is summarized in the Administrative Framework section in B.3 of the EIA Report.

(5) Summary of Existing Environmental and Socio-Economic Condition of Selected Site for the Agro-industrial Park

The candidate site for the Agro-industrial Park was finally selected and agreed among stakeholders during the second technical level meeting on 25 October 2007. The location, area and land ownership of the selected site are briefly explained in section II-2 (1), Development Plan. Existing environmental and socio-economic conditions of the selected site is summarized as shown below. Details are explained in the EIA report.

Physical and Ecological Environment

- a) The candidate site is located in a desert land with a gradual slope of around 1.4% from west down to east. Topography, geology and climate at the said site are summarized in section III-1, Chapter III. Its soil condition consists mostly of sandy soils, which is determined from soil sampling and laboratory tests conducted in May 2008²⁷.
- b) A *Wadi* (dried-up river) crosses the center part of the candidate site from the west to east direction. The *Wadi* has only a small run-off discharge after rainfalls during the winter season.
- c) The candidate site has a predominantly Mediterranean climate which prevails over the Jericho area. Hot dry summer is experienced from June to September with a temperature of over 28°C, and a short winter with rains from November to March. The annual rainfall in said area is less than 200 mm.
- d) There are no rare vegetation, flora and fauna in and around the site. Millions of migratory birds pass through the JRRV area, including in and around the site. However, these are not identified as rare species.
- e) Available water resources around the site are mainly from groundwater wells and springs. There are 17 agricultural wells, located between Jericho City Center and the candidate site. Ein-Sultan Springs is a main spring in Jericho, located in the northwest of the city center.

²⁷ Detailed characteristic of the soil and geological conditions at the site will be analyzed through conducting topographic and geology surveys in June through August 2008.

Socio-economic Environment

- a) There are no inhabitants in the candidate site. According to the Palestinian Central Bureau of Statistics (PCBS), the population of Jericho City was 20,416 in 2006. Most of the population is concentrated in the central part of the city. Jericho City has the lowest population density among the major cities in the West Bank, with 69 persons per km².
- b) The site is located in an unused land situated in the southern part of the city. Existing land uses in the surrounding area include irrigation and industry. There exists a steel factory at the northeast side of the site. Most urban functions are concentrated in the center, including administrative and commercial functions, wholesale markets, religious buildings, and recreational spots.
- c) Major economic activities in Jericho are tourism and agriculture. In the Jericho Governorate, tertiary industries including commerce, restaurants, hotels and services contribute to a large share of economic output, with a total of 60.9% in 2007. Major employment demands in Jericho are in the tourism sector. Although agricultural sector is also important in Jericho, its employment share is only 15.6%.
- d) Jericho has a number of significant historical and cultural heritage sites which are located at the crossroads of the east-west tourist corridor from Jerusalem to Amman in Jordan, and at the north-south tourist corridor from Tiberias to Eilat in Israel. Jericho is known among foreign tourists as a pilgrimage destination. The total number of visitors to Jericho Governorate and the Jordan Valley in 2007 was 636,637²⁸, of which 52.5% are foreign visitors (overseas Palestinians and Arab Israelis). In Jericho and Jordan Valley, major tourism resources and facilities are concentrated in Jericho. Most of the visitors seemed to have visited Jericho. It is noted however that there are no historical and cultural monuments and facilities in and around the selected site for the Agro-industrial Park.
- e) There are two existing roads leading to the Agro-industrial Park. One starts from the center of Jericho Municipality leading to the steel factory, right next to the site. Most part of the road near the center of the city is paved. The road section (1.8 km long and 14 m wide) from the new fruits and vegetables market to center of Jericho was rehabilitated by EU. Other sections near the Agro-industrial Park are unpaved. The other existing road (unpaved) towards the west direction, leading to the Jericho Regional Hospital, traverses an agriculture land. Its present condition is very poor. Jericho City's local government intends to improve this road and have already requested the central government for funding. Furthermore, there is also an existing 4 m wide road from the steel factory towards Route 90, which consists of unpaved road between the steel factory and junction with the old road and the paved old road. However, this existing road remains unused and not linked the Route 90.
- f) Bedouins community camps are observed along the existing road from the site to Jericho Regional Hospital. Bedouins is an ethnic community with indigenous lifestyle and have no land ownership rights.

²⁸ Tourist statistics by governorate in Palestine, 2007, Ministry of Tourism and Antiquities

(6) Analysis of Alternative Plans

This section deals with the analysis of alternative plans, starting from the justification of the Agro-industrial Park, by conducting comparisons of the social and environmental impacts of “zero option” in which the Agro-industrial Park development project is not implemented. Consequently, analysis of alternative plans by component is carried out based on off-site and on-site infrastructures presented in the Study.

In the analysis, the best or better alternative is chosen and recommended as the appropriate mitigation measures.

The analysis of alternative plans includes following:

- Project alternatives (including zero option)
- The site selection for the Agro-industrial Park development in JRRV
- The alternatives for on-site and off-site infrastructures (stage wise development, access roads, water supply, wastewater treatment and solid waste management)

Results of the analysis of alternative plans are explained in detail in B.4 of the EIA Report attached as Annex B.

(7) Potential Environmental and Social Impacts and Mitigation Measures (Stages I and II Development)

Anticipated environmental and social impacts according to three implementation stages i.e. pre-construction, construction, and operation, are summarized in the following table. In the operation stage, components of infrastructure are classified as either “on-site” or “off-site”.

Table II-5-1 Anticipated Environmental and Social Impacts and Mitigation Measures by Stage

1) Pre-construction Stage

Environmental category	Environmental factors	Anticipated impacts	Mitigation measures
Socio-economic environment	Land use and land value	Land adjacent to the site sloped with <i>Wadi</i> will restrict future development. Project site is a desert land with no green areas. Land price along the access roads is expected to appreciate.	<i>Wadi</i> improvement will be implemented so that the site development for industrial estate can be possible. Illegal land buying and selling is restricted. Speculative investment on land surrounding the site is also restricted.
	Indigenous community	There is a Bedouins' community area near the project site, along the existing road 1. Passing of construction vehicles on said access road and its improvement works will directly impact their living and activity, if Bedouins are not relocated from the existing area before the construction stage.	Bedouins settled land does not belong to them and it belongs to Al Hussein Family. Bedouins have no rights for land ownership there. Jericho municipality is responsible for resettlement of Bedouins issue. At present, there is no legal procedure, law or guideline for the relocation of Bedouin in Palestine. To mitigate the issue stated by the Ministry of Local Government and The Jericho Governorate, the Jericho Municipality has to discuss this issue with Al Hussein Family and establish a committee for this issue including members from the Jericho Governorate. The Jericho Governorate is responsible to follow up the committee. An appropriate action for resettlement of Bedouins including explanation of the project to Bedouins and provision of alternative locations which needs to be discussed and decided in the committee during the pre-construction stage.

2) Construction Stage

Environmental category	Environmental factors	Anticipated impacts	Mitigation measure
Physical and ecological environment	Air quality	Dust, odors, and fumes will be generated due to construction activities in particularly land grading and road construction, which are the main causes of deteriorating air quality. When Khamaseen wind (hot, dry, and sandy), blows from Saudi Arabia, impact of dust is very severe. Exhaust gas emitted from construction vehicles during the construction work may also cause air pollution.	Install construction sheet or fence around the construction site in order to prevent dust propagation around the vicinity. Sprinkle water using a sprinkler truck. Set regulation for efficient construction vehicles with less exhaust gas emission and control traffic volume and speed of those utilizing the access roads.
	Flora and fauna	Noise, vibration and exhaust gas during the construction work will pose as negative impacts to migratory birds passing through the site and its surrounding areas in the JRRV.	Monitoring of birds and data collection by Palestine Wildlife Society shall be initiated for analysis of detailed impacts.
	Water resource	The construction stage can affect mainly surface water especially at the site, since it is close to <i>Wadi</i> . Contamination can be related to any oil spills or from dust and fumes that might accumulate on the surface of the ground. <i>Wadi</i> has no running waters all year round except mainly during the winter and spring seasons.	Appropriate safety operation and management of the construction work needs to be taken to avoid contamination. Regular monitoring of the construction work and inspection of construction equipments are required. Installation of a plant of turbid water treatment. In case construction takes place during winter and spring seasons, precautions should be taken related to any kind of oil spill.
Socio-economic environment	Employment and local economy	Construction work creates a large employment opportunities in Jericho, which is a positive impact due to the project. It consequently encourages construction businesses in Jericho and will also boost its local economy.	
	Land use and land value	Land use around the park and access roads will change. Land value along the access roads is expected to appreciate. It will have impacts to existing land use and land owners along and near the access roads.	Appropriate control of development along the access roads is necessary based on land use plan for Jericho Municipality. Illegal land buying and selling shall be restricted.
	Traffic movement	Construction vehicles may create traffic congestion at the security checkpoint of Jericho City during the peak time of construction work. This will affect movement of tourism transportation coming and leaving Jericho City during peak tourist season (March-April, November-December).	Reduce construction work during day time and shift activities at night time. Control traffic volume for construction vehicles during the peak tourist time in order to minimize traffic congestion. Provide priority lane for construction vehicles at the security checkpoints of Jericho City. Introduction of an advanced registration system for transporting construction materials and equipment.
Health and safety	Air emission	Dust, odors, and exhaust gas caused by construction activities induce negative impact to the vicinity of the project sites. Local residents along the access roads (1, 2 and road toward Road no. 449) may be affected by dust and exhaust gas from construction vehicles.	Install construction sheet or install around the construction site in order to prevent dust propagation around the site. Set regulation for efficient construction vehicle with less exhaust gas emission and control traffic volume and speed of those utilizing the access roads. Sprinkle water using sprinkler truck.
	Noise and vibration	Construction vehicles and equipment will cause noise and vibration during the construction work. Particularly, heavy construction vehicles passing through the access roads will create noise and vibration which have negative impacts to residents especially along said access roads.	Using sound-insulated equipment and setting up fence around the construction site will reduce the average noise level during construction. Work equipment should be well maintained to minimize noise level. Control of traffic volume and speed of construction vehicle will reduce noise and vibration and consequently minimize impacts to residents along and near the access roads.
	Health and safety	Construction worker is subjected to potential risks of accident and injury. Severe heat and hot condition will pose as threat to construction activities.	Construction work may be shifted from day time to night time. Wearing safety devices shall be compulsory for construction workers. Implementation of safety patrol.

3) Operation Stage

On-site/off-site/other	Environmental component	Anticipated impacts	Mitigation measure
On-site infrastructure	Water resource	<u>Surface water</u> Partial erosion in <i>Wadi</i> is anticipated due to water flow with sandy clay. <u>Ground water</u> Contamination of ground water in case raw sewage is spilled at the site.	Design of <i>Wadi</i> improvement for preventing partial erosion of <i>Wadi</i> including improvement of channel (width, depth) and protection works. Wastewater treatment facilities are developed in each stage within the site. Oxidation ditch process of wastewater treatment facilities shall be adopted to reduce the impact of increased nutrients and pollutants getting into the ground water.
	Wastewater	Overflow of the collection system or any leakage of wastewater outside of the waste water treatment and collection system, will cause contamination of the soil and ground water which will emit foul odor.	Wastewater treatment facilities including pre-treatment facility are supposed to be a mitigation measure. Proper planning of wastewater collection facilities, designed to meet hourly maximum discharge, shall be implemented to avoid overflow of wastewater.
	Solid waste	Positive: Reduction of volume of on-site wastes, sorting different wastes for reuse and removal of sludge. Negative: Attraction of insects; disturbance of migratory birds; deterioration of air quality around site; foul odors; impacts due to poor handling and stage management.	Proper management and operation of solid waste facilities and handling and capacity building are indispensable. Using appropriate deodorizing substance such as rock wool and zeolite for deodorizing system.
Off-site infrastructure	Access road	Dust, fume, noise and vibration from trucks and commuting vehicles to/from the Agro-industrial Park will have impacts to the area along the road. Possible appreciation of land price along the access road.	Control of traffic volume and speed of vehicles passing along the access road. Illegal land buying and selling shall be restricted.
	Water supply	Considering alternative 1, water supply from existing wells is not subjected to treatment and thus, not drinkable. Stage II requires combination of water supply alternatives. Ground water level of wells (Alternative1) might reduce due to excessive water pumping.	Desalination and disinfection to meet the water quality standards. Control of pumping water from wells.
	Wastewater	Impact may be caused by mismanagement in operation and maintenance and breakdown of the system. This will have impacts to soil and ground water and odor.	Proper operation and maintenance for wastewater treatment facilities by responsible and skilled operators Regular monitoring is indispensable.
	Solid waste	Positive: Compost will be an important income generation source. Negative: Possibility of emitting offensive odor during transporting from the park to the land fill site. Polluting water will occur when rain water is mixed with solid waste. Evaporation of flammable gases will lead to risks of fire at the land file site.	Proper operation and maintenance for solid waste facilities (off-site) by responsible operator. Regular monitoring is indispensable. Installation of roof over the facilities for mitigating polluting water
Health and safety	Health and safety	Any negative impacts related air quality, noise, contamination will affect directly or indirectly to workers.	Health and safety guidelines and plans should be implemented by each factory of the park.
Socio-economic	Creation of employment	It was planned that the Agro-industrial Park will accommodate 63 factories with estimated 2,370 employees up to the stage II development. This induces positive impacts to Jericho City, regardless of its relatively small number.	
	Population Growth and housing demand	Inflow of population from other areas to Jericho City will increase due to the Agro-industrial Park development. Potential increase of housing and accommodation demand for employees and visitors after the stage II development.	Residential projects (JDECO, New residential complex housing project) are ongoing, which will partially accommodate the increasing housing demands for the Agro-industrial Park.

Source: JICA Study Team

(8) Potential Environmental and Social Impacts and Mitigation Measures (Stage III development)

After the stage II development, stage III posed as a real challenge for the Agro-industrial Park development in the Jericho area. Its local economy is expected to significantly improve due to the large development and increase in job opportunities during this stage.

The main concern is that the development site (Lot III: 50 ha) is located in area C, which requires the approval of Israel for its development. These critical issues including land acquisition and approval for land development of Lot III should be discussed carefully between Palestinian and Israeli governments, as well as concerned stakeholders before the implementation of the stage III development.

At the stage III development, environmental factors which might impact the environmental and social conditions are the main issues related to water supply, wastewater, and solid waste. Anticipated environmental and social impacts due to these factors are discussed in B. 7 of Annex B.

(9) Environmental Monitoring and Management Plan (EMMP)

EMMP is a detailed plan describing the system of environmental monitoring and the execution of mitigation measures to reduce environmental and social impacts caused by the implementation of the project. It consists of environmental management and monitoring framework, monitoring procedure, monitoring program, and training. EMMP is prepared and implemented according to each development stage of the project, i.e. pre-construction, construction, and operation. The required activities identified by the EMMP will be carried out under the responsibility of PIEFZA, Environmental Quality Authority (EQA) and the tenant enterprises.

Authorities and Implementation Responsibility

PIEFZA is the implementing agency for the development of the Agro-industrial Park and is responsible for the EIA study. Therefore, PIEFZA would be the leading organization in conducting related activities for the EMMP.

As for the environmental monitoring within the boundary of the park (on-site infrastructure), an operation and management enterprise will take the responsibility. On the other hand, PIEFZA, EQA, relevant ministries/agencies and Jericho Municipality will take the responsibility for the environmental monitoring of negative factors affecting the surrounding environment such as ambient air, quality of supplied water, solid waste and noise. However, during the construction stage, the contractor will be responsible in monitoring air quality, noise, vibration, site safety and traffic problems, then report findings to authorized site supervisors.

According to PIEFZA, an environmental officer will be assigned to handle the required documentations for obtaining environmental permission. He will assist each tenant factory in the park to meet compliance on environmental matters such as pre-treated wastewater, air emission, and hazardous material.

Environmental Monitoring and Inspection Department under the General Directorate of Environmental Protection Department in EQA, which is responsible for the management of environmental monitoring, will fully support the related activities in the Agro-industrial Park. EQA is planning to assign an expert who can provide technical assistance to the environmental officer in order to obtain environmental permission and efficiently perform monitoring activities.

Demarcation of responsibilities regarding EMMP is presented in (1) and (4) of B.8, Annex B.

Environmental Monitoring Components

The following environmental components are to be monitored during pre-construction, construction and operation stages.

Table II-5-2 Environmental Monitoring Components by Stage

Stage	Pre-Construction	Construction stage	Operation stage
Environmental monitoring components	<ul style="list-style-type: none"> Land use Indigenous community 	<ul style="list-style-type: none"> Air quality monitoring Site and worker's safety Noise and vibration monitoring Construction waste management 	<ul style="list-style-type: none"> Wastewater treatment effluents monitoring Groundwater monitoring Air emission monitoring Ambient air quality Solid waste and hazardous waste monitoring Noise and vibration monitoring Water resources Operational health and safety plan

Environmental Monitoring Program

The environmental monitoring program covers (i) the parameters to be monitored, (ii) standards to be followed, (iii) location of sampling and/or observation, (iv) duration and/or frequency of monitoring, and (v) supervision responsibility. The proposed environmental monitoring program for the Agro-industrial Park is shown below. The concept of the monitoring program should be further discussed to obtain consensus with PIEFZA, EQA and other responsible agencies, prior to the implementation of the Agro-industrial Park development.

Table II-5-3 Environmental Monitoring Program by Stage

1) Pre-construction Stage

Environmental component	Location	Parameter	Time/ Frequency	Responsibility	
				Implementation	Supervision
Land use	Surrounding areas and route of access roads	Development activity and land use	Periodically	PIEFZA	Jericho Municipality
Indigenous community	Near the park and along the existing road 1	Bedouin community (Relocation)	Before construction	Jericho Municipality	Jericho Municipality

2) Construction Stage (On-site and Off-site Infrastructure)

Environmental component	Location	Parameter	Time/ Frequency	Responsibility	
				Implementation	Supervision
Air quality (Dust, fume)	Construction site, along access roads	TSP, PM ₁₀	Periodically, during site preparation works	Contractor	Jericho Municipality
Noise and vibration	Construction site, along access roads	Noise level (dB(A))	Excessive noise occurred	Contractor	Developer and PIEFZA
Site and worker's safety	Construction site	Visual inspection, Safety plan and data	Daily	Contractor	Developer
Construction waste management	Construction site and its surrounding	Visual inspection, records of waste collection	Weekly	Contractor	Developer

3) Operation Stage (On-site)

Environmental component	Location	Parameter	Time/ Frequency	Responsibility	
				Implementation	Supervision
Air emissions quality (Stack emission)	Factory site, its surrounding areas	SO _x , NO _x , TSP, PM ₁₀	Monthly	Developer	PIEFZA and EQA
Noise and vibration	Inside the park and outside area	Noise level (dB(A))	Excessive noise occurred	Developer	PIEFZA and EQA
Solid waste (sorting, storage)	Solid waste collection facilities (stock yard)	Visible inspection, disposal methods	Periodically	Developer	PIEFZA and EQA
Effluent wastewater (pre-treatment)	Primary wastewater treatment facility	BOD, SS, COD, T-N	Monthly	Developer	PIEFZA and EQA
Operational health and safety	Inside the factory and other related facilities in the site	Workplace air quality, noise, safety measure, injury record	Periodically	Developer	PIEFZA and EQA
Discharge water from storm water drainage	Drainage, <i>Wadi</i>	Visible inspection	During rains	Developer	PIEFZA and EQA

4) Operation Stage (Off-site)

Environmental component	Location	Parameter	Time/ Frequency	Responsibility	
				Implementation	Supervision
Air quality	Along the access roads and near the factory site	SO _x , NO _x , TSP, PM ₁₀	Periodically	PIEFZA (Contracted research lab)	Jericho Municipality and EQA
Noise and vibration	Inside the park and outside area and along the access roads	Noise level (dB(A))	Excessive noise occurred or when local complaints are received	PIEFZA (Contracted research lab)	Jericho Municipality and EQA
Solid waste management	Composting site, transporting route, landfill site	Visible inspection, disposal methods	Periodically	PIEFZA	Jericho Municipality and EQA
Effluent quality of wastewater	Secondary wastewater treatment facilities	BOD, SS, COD, T-N	Monthly	PIEFZA (Laboratory test)	PWA
Ground water		pH, BOD, COD, SS, TDS, EC, NO ₃ , salinity	Twice a year	PIEFZA (Laboratory test)	PWA
Safety on traffic	Areas along the access roads	Visible inspection, traffic volume, accident record	Periodically	PIEFZA	Jericho municipality

Source: JICA Study Team

Training

The designated environmental officer in the Agro-industrial Park, in cooperation with the experts from EQA, should prepare environmental monitoring guidelines which include the relevant conditions and procedures. He is also expected to conduct trainings to those responsible for environmental monitoring in each tenant enterprise, regarding the use of the guidelines.

It is also recommended that training shall also be carried out for the tenant enterprises' general workers, on matters concerning basic knowledge on environmental, health and safety, and potential hazards. The primary subjects of the trainings are as follows:

- Compliance with environmental standards,
- Pollution prevention and new technologies,

- Emergency and safety measures, and
- Management of environmental data collected

For the industrial park as a whole, effluent emission, solid waste management and wastewater treatment are the most important environmental components to be managed and monitored. However, since the capacity of PIEFZA in conducting such activities is still limited, capacity building of the environmental officer as well as increase in supporting staff is indispensable. Technical assistance from EQA, PWA, JCspd, research laboratories and specialized private companies is vital for developing the capacity of PIEFZA.

In addition, the capacity of EQA for monitoring ambient air quality and atmospheric emissions seems relatively low compared to other environmental components such as effluent and ground water quality. It would be worthy in the future to consider also capacity building in this field.

(10) Stakeholders Meeting

Stakeholders meetings are required in the process of preparation and implementation of the EIA, in accordance with the environmental assessment guidelines. This is initiated and implemented by PIEFZA and JICA Study Team with the assistance of EQA. Participants for the stakeholders meetings include EQA, project related government ministries, Jericho Municipality, local communities, NGOs, investors and private sectors. Results of these meetings are included in the EIA Report. Stakeholders' meeting was held three times during the ESC Study.

The First Stakeholders Meeting

The first stakeholders meeting for EIA was held in Jericho on 10 June 2008. The meeting agenda included presentation of the outline, environmental guideline and EIA procedure in Palestine. A group discussion on expected environmental and social impacts due to project implementation was also conducted. It covered a wide range of subject matters including wastewater treatment, solid waste management, quantity and quality of water, and anticipated negative environmental impacts due to project implementation. Based on the discussions held, it was realized that in spite of the negative impacts to physical environment, the project will have positive impacts to socio-economic environment such as increase in income generation, creation of employment opportunities, reuse and recycle of resources, and improvement of the agricultural sector in terms of technology, production and human resources. The recommendations and issues raised during the discussions were reflected in the results of the EIA Study.

The Second Stakeholders Meeting

The second stakeholders' meeting was held on 15 October 2008 at Jericho Resort Village in Jericho. The meeting agenda included presentation on the outline of the projects and the EIA process, review of the first stakeholders meeting and presentation and discussion the EIA Study results (environmental and social impacts, alternative plans, mitigation measures, environmental monitoring plan). There were 74 participants



Opening speech by Dr. Saeb Erikat



Group discussion

in the meeting including JICA Study Team. More than half of the participants were from the central and local governments.

The main objective of the meeting was to receive comments and suggestions from stakeholders through the discussions on the results of EIA study, presented by JICA Study Team.

Major questions and comments were related to:

- Impact on migratory birds flying over or flying near the park,
- Effect of solid waste facility (stock yard) on birds,
- Effect of the existing steel factory on food processing and production in the park,
- Effect on groundwater under the park development area.
- Water quality on Jericho Well no.1 which is not suitable for drinking due to the salinity of water.
- Use of alternative water supply sources,
- Consideration of applying solar energy as alternative energy source for the park,
- Demand for medical facility (hospital) or expansion of existing Jericho Hospital to serve the increasing number of residents and employees in the park,
- Management of large volume of solid waste generated by the park operations, and
- Agreement with Israeli government for the use of Road no. 90

JICA Study Team received valuable questions and comments which have been taken into account in the EIA study, through discussions held with the participants. These questions, comments, and recommendations raised by the participants are reflected in the EIA Study Report.



**Presentation of the Result of EIA Study
by JICA Study Team**



**Participants raising questions and
comments**

The Third Stakeholders Meeting

After the second stakeholders' meeting for the EIA Study, JICA Study Team conducted the third stakeholders meeting on 26 October 2008, at the conference room of the Jericho Municipality, in cooperation with its Department of Public Relations. The meeting was mainly intended for the residential communities in Jericho City. There were 12 participants in the meeting including members of JICA Study Team and representatives from the steel factory, residential complex of Jericho Municipality, JDECO Residential Complex in New Jericho Area, PARC and Jericho Municipality.

Firstly, JICA Study Team explained the outline of the project, EIA process and requirements, result of the EIA Study. During discussions, various comments were raised by the participants mainly concerning the impact on water supply, wastewater, and solid waste due to the Agro-industrial Park development. These comments and recommendations are reflected in the EIA Study Report.

II-6 Movement and Access

In the course of the Study, many enterprises interviewed pointed out the difficulties in movement and access of goods and people. The Agro-industrial Park will be a core production and business center, generating daily movement of 2,370 factory workers and 260 trucks transporting cargoes to and from the stage II development of the park (refer to Table III-2-2 in III-2). Smooth movement and access of goods and people will be vital for the efficient operation of tenant enterprises/industries.

A comprehensive system of 85 manned checkpoints and more than 460 road blocks regulates or prevents Palestinian Vehicles from using the West Bank roads as of 2008. Palestinian drivers wanting to travel on those roads need permits. A different permit is generally required depending on whether the vehicle is commercial, public transport and private car. Few drivers of private cars are able to obtain these permits. A growing trend is to funnel Palestinian traffic under the road network via tunnels and underpasses.

There are the four key commercial terminals in the West Bank. They are i) Taybeh/Shah'ar Ephraim terminal located south of Tulkarm, ii) Jalameh terminal located north of Jenin, iii) Tarqumia terminal located northwest of Hebron and iv) Betunia terminal located southwest of Ramallah. According to *Cargo Movement and Access Monitoring and Reporting* published by Pal Trade, the average truckloads per day for export and import were 30 and 50 in Taybeh/Shah'ar Ephraim terminal, 30 and 60 in Tarqumia terminal, and 30 and 40 in Betunia terminal as of January 2008. The average time spent for waiting and checking per truck was between 2 and 2.5 hours at Taybeh/Shah'ar Ephraim, Tarqumia and Betunia terminals. The highest time spent for waiting and checking was observed for dairy products which took more than 3 hours while the lowest time spent (30 minutes) was observed for electrical equipment in Betunia terminal.

(1) Commute

ID cards bearing signature of employers would be the minimum requirement for employees commuting to and from the Agro-industrial Park. In spite of this, employees commuting from remote areas would experience unnecessary interrogations at checkpoints. In order to avoid such disturbances, they would need to obtain special permits issued to registered drivers and vehicles (buses) which are transporting the employees. Moreover, ID cards obtained by employees should bear the signature of a more prominent company such as that of a developer managing the Agro-industrial Park.

To facilitate smooth passage of commuting employees through checkpoints, the developer, instead of individual tenant enterprises, would have to authorize drivers and vehicles to obtain registration and ID cards for the employees. The Labor Service Office (refer to section IV-2) would be responsible for these services. Tenant enterprises/industries would pay transportation service costs depending on the number of their employees benefiting from such services.

(2) Cargo

Goods are transported either through inbound or outbound cargoes. Inbound cargoes contain raw materials or materials/equipment. These would be procured from the West Bank, or could be imported. Outbound cargoes

meanwhile consist of final products mainly for export. In the Study Part 1, the following constraints were identified through interviews with Palestinian companies.

- a) Delay in delivery
- b) Unpredictability of delivery
- c) High transportation cost
- d) Damages to raw materials and products due to back to back system

To facilitate movement operations and avoid the above disruptions, the following measures should be initiated by cargoes of tenant enterprises:

- a) Advance notification of information to checkpoints (driver's ID, car number and date/time of cargo arrival)
- b) Coordinated procurement of fuel and equipment required by tenant enterprises and
- c) Use of known/trusted delivery service companies for cargo transportation

These measures would contribute to smooth passage of inbound goods through checkpoints. Outbound cargoes for export utilize the Allenby Bridge Terminal or commercial terminals such as the Bardaleh Terminal (main products passing through this terminal are fresh vegetables and fruits). The Allenby Bridge Terminal has already introduced the facilitation of smooth passage and advance notification (24 hours advance notice) for all commercial vehicles. However, in case other commercial terminals are opted, hiring of Israel delivery service firms adopted by many Palestinian companies is advisable to facilitate passage of outbound cargoes under the existing conditions.

(3) Near-by Checkpoints

The issue on movement and access concerning the nearby checkpoints was discussed at the headquarters of COGAT during the Study Part 1. The discussion focused on i) reduction of passage time of outbound cargoes through the Mousa Alami Gate to the Allenby Bridge, ii) security system in case of A-2 Access Road, and iii) security system inside the Agro-industrial Park.

There are two checkpoints near the Agro-industrial Park, namely DCL checkpoint and Musa Alami Gate. These however are not commercial terminals. Hence, as inbound and outbound cargoes increase, appropriate measures for smooth passage of people and cargoes at both checkpoints should be implemented.

DCL Checkpoint

The DCL checkpoint allows inbound transportation to enter Jericho City from outside. However, commercial trucks can not leave Jericho through the same checkpoint unless their drivers hold East Jerusalem or Jericho IDs. Two measures need to be implemented to ease passage of trucks:

- a) Facilitation of commercial vehicles
- b) Obtain permission for outbound commercial vehicles to cross the Jericho DCL checkpoint

Method b) is particularly important if the Musa Alami Gate occasionally closes. Outbound transportation for final products would have to pass through the DCL checkpoint.

Musa Alami Gate

Musa Alami Gate currently has two lanes for accommodating incoming and outgoing vehicles. A long queue of vehicles queuing to pass through the outgoing lane was often observed during summer season. It could be realized that smooth passage of tenant enterprises' cargoes can be facilitated if the outbound cargoes from the Agro-industrial Park are allowed to use the incoming lane flexibly (traffic counterflow system) during the traffic congestion in summer.

(4) Further discussion

The issue on movement and access for the Jenin Industrial Estate has been discussed by both the Palestinian and Israeli sides through a committee formed by concerned agencies (MoNE/PIEFZA for the Palestinian side and COGAT for the Israeli side). Thus, the movement and access issues on the Agro-industrial Park will be also discussed through the same committee.