

JAPAN INTERNATIONAL
COOPERATION AGENCY (JICA)

PALESTINIAN NATIONAL AUTHORITY
MINISTRY OF LOCAL GOVERNMENT

**THE PROJECT FOR CAPACITY DEVELOPMENT ON
SOLID WASTE MANAGEMENT IN
JERICHO AND THE JORDAN RIVER RIFT VALLEY**

**CONSOLIDATION IMPROVEMENT REPORT
OF
SOLID WASTE MANAGEMENT**



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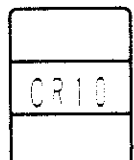


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January 2010

JICA EXPERT TEAM/PALESTINIAN COUNTERPART TEAM

Yachiyo Engineering Co., Ltd.



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Currency Exchange Rate

Average month rate of January 2010

US\$ 1.00 = JPY 91.45

NIS 1.00 = JPY 24.097

JD 1.00 = JPY 129.169

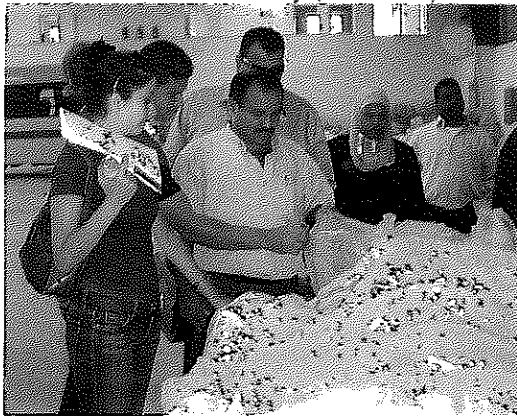
(Source: Web-site of JICA, Exchange rate)



Solid Waste Survey (Jan. 2006)



Community Meeting in Jiflik (March 2006)



Study Tour in Jordan (Sept. 2006)



Starting of JCspd Service (Jan. 2007)



One Year Anniversary of JCspd Service (Feb. 2008)



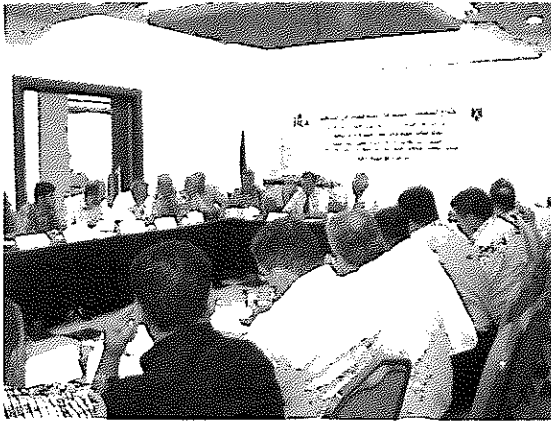
Pilot Project for Station Collection (Dec. 2007)



Extension of Jericho Landfill Site (Feb. 2008)



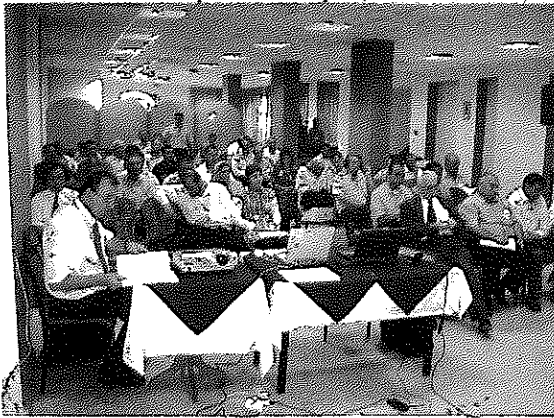
Opening of Jericho Landfill Site (Feb 2008)



Third Workshop of 11 JCspd (June 24, 2008)



Terminal Evaluation (June 2008)



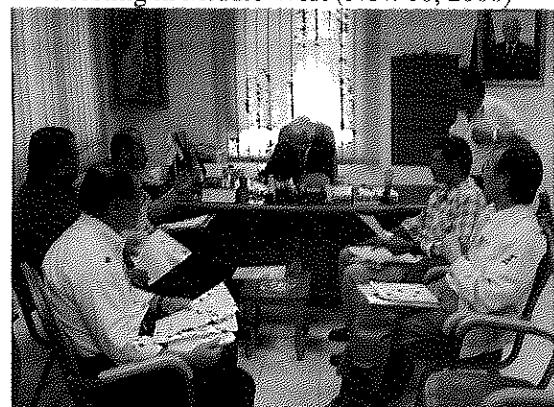
Seminar on SWM (August 4, 2008)



Meeting in Middle-West (Nov. 16, 2008)



Safety and Sanitation Committee (Sept. 27, 2009)



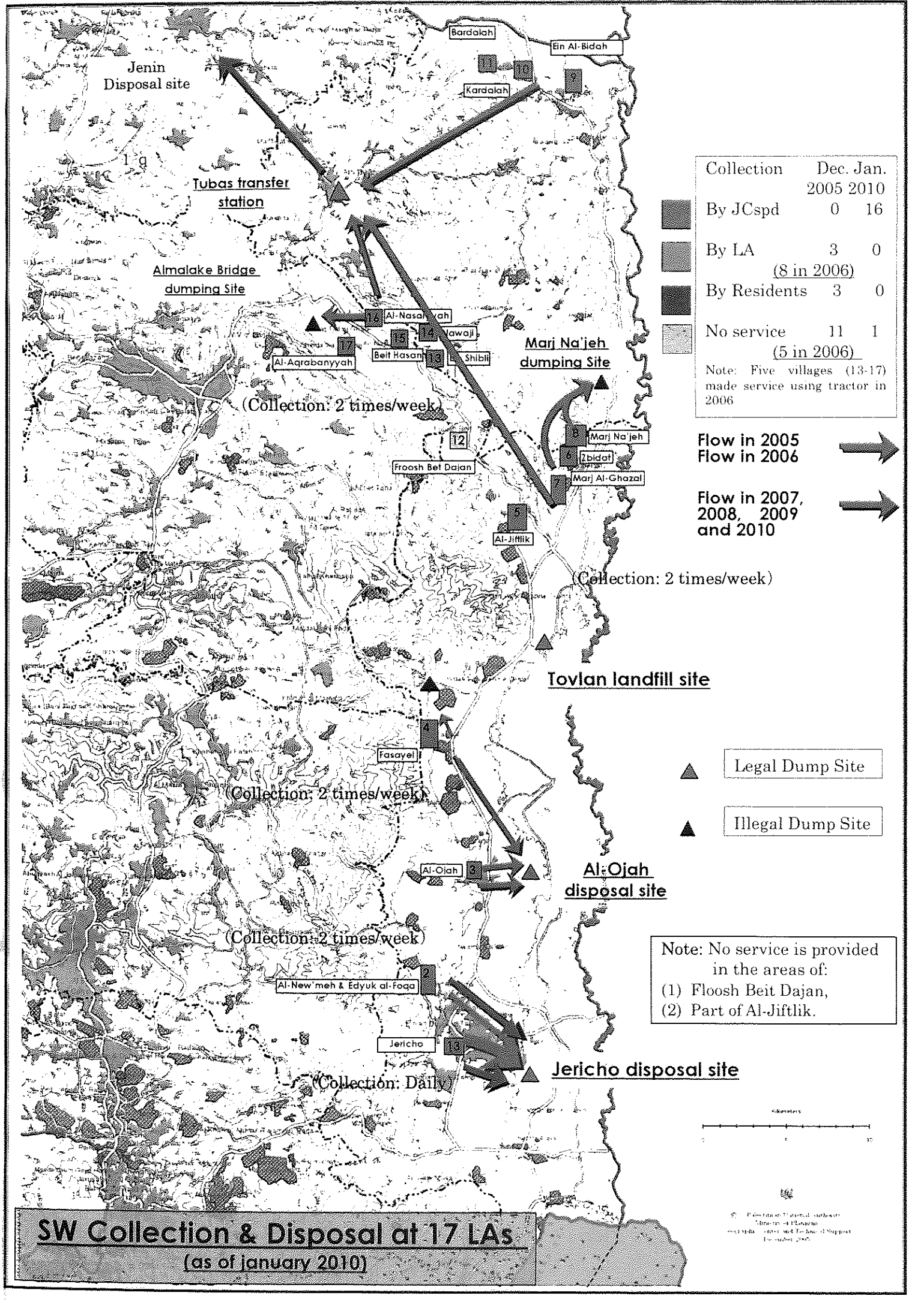
AB Meeting of JCspd JJRRV (Oct. 18, 2009)



12th Joint Coordination Committee (Oct. 21, 2009)



New 12 m³ Compactor Vehicle (Sept. 2009)



Collection	Dec. 2005	Jan. 2010
By JCspd	0	16
By LA	3	0
(8 in 2006)		
By Residents	3	0
No service	11	1
(5 in 2006)		

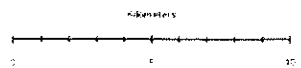
Note: Five villages (13-17) made service using tractor in 2006

Flow in 2005
Flow in 2006

Flow in 2007, 2008, 2009 and 2010

- ▲ Legal Dump Site
- ▲ Illegal Dump Site

Note: No service is provided in the areas of:
 (1) Floosh Beit Dajan,
 (2) Part of Al-Jiftlik.



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 Ministry of Planning
 Economic, Social and Technical Support
 February 2007

SW Collection & Disposal at 17 LAs
 (as of January 2010)

PREFACE

The Ministry of Local Government (hereinafter referred to as “MoLG”), the Ministry of Planning of Palestinian Nation Authority and the Japan International Cooperation Agency (hereinafter referred to as “JICA”) agreed to conduct the Project for Capacity Development on Solid Waste Management in Jericho and the Jordan River Rift Valley (hereinafter referred to as “the Project”) on July 2, 2005. The Project aims to introduce a sustainable and sanitary system of solid waste management in JJRRV and to disseminate the experience and knowledge of the developed solid waste management system in JJRRV.

The Joint Council for Service, Planning and Development for Solid Waste Management in Jericho and the Jordan River Rift Valley (hereinafter referred to as “JCspd JJRRV”) which consist of 17 Local Authorities in JJRRV was established on August 6, 2005 to provide Solid Waste Management service in the area. The Mayor of Jericho Municipality, Mr. Hasan Saleh, was selected as the president of JCspd JJRRV and Head of Zbidat council, Mr. Hasan Germi, was selected as the vice president.

JICA started the training of Palestinian counterparts in Japan on September, 2005 and sent an expert team to Palestine on November 13, 2005 for implementation of the Project. Technical and administrative staff of the member LAs of JCspd JJRRV was assigned as counterparts of the JICA Expert Team. The JICA Expert Team and the counterparts finalized the Inception Report on November 30, 2005 and the Project activities started.

The Basic Plan was prepared on August 2006 and in which the principals of JCspd JJRRV was set. Also the start-up schedule to deliver the SWM service in JJRRV was set from January 2007. Also Action Plan was prepared on December 2006 to support sustainable implementation, improvement and development of solid waste management.

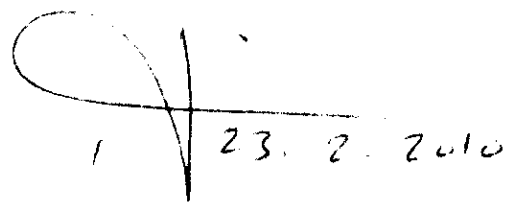
Thus, JCspd JJRRV started smoothly solid waste management service in whole JJRRV from January 2007.

This Consolidation Improvement Report presents actual improvement of solid waste management through the implementation of Action Plan in the Project.

Jericho
January 7, 2010



Mr. Hiroshi ABE
Team Leader
JICA Expert Team



Mr. Hasan Saleh
Project Director/ President of JCspd JJRRV
Mayor of Jericho Municipality

CONSOLIDATION IMPROVEMENT REPORT OF SOLID WASTE MANAGEMENT

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Reference: (Reports already prepared and submitted)

1. Manual for Collection and Transportation
2. Manual for Operation and Maintenance of Landfill Site
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ABBREVIATIONS AND ACRONUMS

< Organizations >

AB	Administrative Body
C/P	Palestinian Counterpart
DJCspd	Department of Joint Councils for Services, Planning and Development
GB	General Body
GTZ	German Technical Cooperation
JCC	Joint Coordinating Committee
JCspd / JSC	Joint Councils for services, planning and development / Joint Service Council
JET	JICA Expert Team
JICA	Japan International Cooperation Agency
Las	Local Authorities
MoH	Ministry of Health
MoLG	Ministry of Local Government
PNA	Palestinian National Authority
UNDP	United Nations Development Programme
UNRWA	United Nations for Relief and Works Agency

< Currency >

NIS	New Israel Shekel
JPY	Japanese Yen
US\$	US Dollars
JD	Jordan Dinnar

< Others >

JFY	Japanese Fiscal Year
JJRRV	Jericho and Jordan River Rift Valley
JRRV	Jordan River Rift Valley
M/M	Minutes of Meeting
PDM	Project Design Matrix
PO	Plan of Operation
R/D	Record of Discussion
SWM	Solid Waste Management

CHAPTER 1 INTRODUCTION

1.1 Background

Local authorities (LAs) including municipalities and village councils are directly responsible for solid waste management (SWM) services in Palestine. The Ministry of Local Government (MoLG) supports and coordinates the LAs in various ways. The Local Authorities Law (1997) of the Palestinian National Authority (PNA) allows the small-scale LAs such as village councils to organize an association, the Joint Service Council (JSC), for the provision of public services.

In order to respond to the rising needs and requests of the JSCs, the Department of Joint Councils for Services, Planning and Development of MoLG (DJCspd) was established on April 21, 2004. One of the duties of the DJCspd is to work on attracting the maximum number of LAs and communities to become members of the Joint Councils for Services, Planning and Development (JCspd). Against this background, the JCspd for SWM in Jericho and the Jordan River Rift Valley (JCspd JJRRV) was established on August 6, 2005.

The SWM in Palestine is facing the following problems resulting from an increase in population and traffic congestion due to security checkpoints:

- 1) Many LAs and JCspds have difficulty accessing waste disposal sites.
- 2) Many LAs do not always provide sufficient SWM services, and often fall into financial difficulties due to increased operational costs.
- 3) Open-air burning of waste and temporary disposal sites has a negative impact on public health and the environment.

Under these circumstances, in August 2004 the PNA requested the Government of Japan to provide a technical cooperation pertaining to the establishment of a system and a model for SWM by the LAs and the JCspd in Tubas, Nablus and Jericho districts. In response to the request, JICA carried out a study to examine the background to the request in September 2004 and a project formulation study in February 2005.

An Implementation Study team was also dispatched in July 2005 and both the Palestinian and Japanese sides agreed to implement the technical cooperation entitled "the Project for Capacity Development of SWM in Jericho and the Jordan River Rift Valley" (the Project) and signed a Record of Discussion (R/D) and a Minutes of Meeting (M/M) on July 2, 2005.

On November 13, 2005, JICA sent an expert team to Palestine to carry out the Project.

1.2 Objectives of the Project

The Objectives of the Project are summarized as follows;

- A sustainable and sanitary system of SWM is to be introduced to JJRRV.
- The experience and knowledge of the developed SWM system in JJRRV is shared as a model with the other areas in Palestine.

The following output is expected to be gained from the Project.

- 1) Establishment of a body to operate and monitor the Project
- 2) Institutional building of a sustainable body of SWM (JCspd)
- 3) Identification of problems within the existing SWM
- 4) Formulation of an action plan to solve these problems
- 5) Implementation of the action plan to improve the SWM system

- 6) Holding seminars/workshops for the dissemination of improved SWM
- 7) Learning the basic knowledge relating to an integrated SWM

1.3 Project Area

The Project area covers the 17 LAs that are located along Jericho and the Jordan River Rift Valley (JJRRV) including Jericho Municipality in the south and Bardalah Village Council in the north. The names of the 17 LAs are presented in Table 1.3.1.

Table 1.3.1 Local Authorities of JCspd for SWM in JJRRV

Name of LA	Governorate	Name of LA	Governorate
1. Jericho	Jericho	9. Ein Al-Bidah	Tubas
2. Al-New'meh & Edyuk Al-Foqa	Jericho	10. Kardalah	Tubas
3. Al-Ojah	Jericho	11. Bardalah	Tubas
4. Fasayel	Jericho	12. Froosh Beit Dajan	Nablus
5. Al-Jiftlik	Jericho	13. Ein Shibli	Nablus
6. Zbidat	Jericho	14. Nawaji	Nablus
7. Marj Al-Ghazal	Jericho	15. Beit Hasan	Nablus
8. Marj Na'jeh	Jericho	16. Al-Nassaryyah	Nablus
		17. Al-Aqrabanyyah	Nablus

Note: South (2,3,4), North (9,10,11)
Middle East (5~8), Middle West (12~17)

There are 4 major check points in the area as follows:

- 1) Jericho DCO : Jericho—Jerusalem
- 2) Yitav : Jericho-- Ramallah and Al-Ojah
- 3) Hamra : Nablus-- Jordan valley
- 4) Tasir : Tubas -- Jordan valley

1.4 Description of the Project Area

The area extends 70 km from south to north and 20 km from east to west. The population of year 2006 of the 17 LAs including 2 refugee camps of Jericho was 50,493 persons and annual growth rate is 3.5 % according to statistic data of PCBS as shown in Table 1.4.1, which is applied to formulate the SWM plan of JCspd as the basic data of the project. 60 % of the population lives in Jericho and two refugee camps and remaining 40 % scattered in 16 LAs.

The family size of the area was studied by the "Jericho Regional Development Study Project, JICA" and it was 6.4 in Jericho municipality, 8.5 in Al-Ojah municipality, 7.4 in Tubas governorate, and 9.3 in Jordan valley villages of Nabuls governorate.

There is no economic statistical data available for the area of JJRRV. However, Prime sector was a leading industry in the area, especially agriculture. The share of primary sector in the GDP contribution was less than 10% in 2005 in Palestine, while the sector provides 16% of total employment. The sector generated 25% of all Palestine exports such as fruits, vegetables, etc.

According to the statistical data of PCBS, there were 836 establishments in operation in total of the area of JJRRV. Among them, a predominant number of 587 establishments (approx. 70% of total) operated in Jericho municipality, 107 in other 7 localities of Jericho governorate, 25 in 3 localities of Tubas governorate, and 117 in 5 localities of Nablus governorate (not available for Nawaji).

Table 1.4.1 Population of the Project Area

Name of Governorate	No.	Name of Local Authority		1997	2006	2007	2010	Growth Rate (%)	
				Census	PCBS	Estimate	Estimate	97-06	06-10
Jericho	1.1	Jericho	M	14,744	20,416	20,967	22,712	3.8%	2.7%
	1.2	Refugee Camp	-	6,051	8,379	8,622	9,321	3.3%	
	2	Al-New'meh & El Dyuk Al-Foqa	LC	1,429	1,979	2,036	2,202	3.3%	
	3	Al-Ojah	LC	2,896	4,010	4,126	4,461	3.3%	
	4	Fasayel	VC	650	900	926	1,001	3.3%	
	5	Al-Jiftlik	VC	3,178	4,401	4,529	4,896	3.3%	
	6	Zbidat	VC	968	1,340	1,379	1,491	3.3%	
	7	Marj Al Ghazal	VC	278	385	396	428	3.3%	
8	Marj Na'jeh	VC	554	767	789	853	3.3%		
Tubas	9	Ein Al-Bidah	VC	791	1,081	1,112	1,203	3.2%	
	10	Kardalah	VC	121	165	170	184	3.2%	
	11	Bardalah	VC	1,154	1,577	1,623	1,754	3.2%	
Nabulus	12	Froosh Bet Dajan	VC	866	1,159	1,193	1,289	3.0%	
	13	Ein Shibli	VC	148	198	204	556	3.0%	
	14	Nawaji	PC	-	300	308	334	-	
	15	Bet Hasan	VC	891	1,192	1,227	1,326	3.0%	
	16	Al-Nasaryyah	VC	1,012	1,354	1,393	1,506	3.0%	
	17	Al-Aquaabnyya	VC	669	895	921	996	3.0%	
Total				36,400	50,498	51,861	56,177	3.5%	

Note: 1) Population of Nawaji of year 2006 is adjusted based on the information from the local community.

2) M=Municipality, LC=Local Council, VC=Village Council, and PC=Project Committee

Source: 1) PCBS; population of year 1997 and 2006, and growth rate of 2006-2010,

2) JICA Expert Team; estimated population of year 2007 and 2010 based on the growth rate adopted in the report of "Jericho Regional Development Study Project, JICA, May 2006"

The whole area lies 200-300 m below the sea level which makes it warm during winter time and hot during summer time. The Mediterranean climate is prevalent in the West Bank, having four months of hot dry summer and a short winter with rain from November to March. The Jordan Valley is warmer and much drier than other area in the West Bank, and this clamatorial uniqueness affect the characteristic of soil and water resource, as well as agriculture in the Valley.

The average annual rainfall is 168 mm in Jericho, and 429 mm in Tubas. The coolest months fall in January with the mean temperature of 13.3 °C in Jericho, while warmest month occurs in July or August with the mean temperature of 30.0 °C (Jericho). Although the Jordan Valley is both extremely dry area and surrounded by desert, some areas have groundwater or spring water to sustain agriculture in the Valley.

In addition, because of warm climate even in the winter season, it provides some competitiveness in agricultural industry. The warm climate of the Valley in the winter season is also advantageous for recreation and tourism.

There are scattered settlement areas in West Jordan Valley and the settlement areas in the Jordan valley are found around the water recourses, particularly at the source of spring water along the eastern slope of the Jordan Rift Valley.

CHAPTER 2 SELECTION OF ACTION PLAN

First Objective of this project is to establish sustainable and sanitary system of SWM in JJRRV as mentioned in the Chapter 1.2. JCspd JJRRV was established as the new organization for SWM to cover 17 LAs in JJRRV. JCspd JJRRV should not only continue existing SWM service in the JJRRV but also to expand and develop the service to cover whole area of JJRRV.

The Basic Plan of JCspd JJRRV was formulated to transfer the function of SWM from LAs to the JCspd and to secure necessary fund, staff, equipment and facilities in which it was scheduled to start the JCspd service from January 2007. Action Plan was formulated to realize the Basic Plan including preparation work in 2006 for starting the JCspd service and JCspd service to be provided in 2007 and 2008.

The Palestinian counterparts, the AB members and the JICA Expert Team discussed and selected issues to be tackled by Action Plan based on the SWM surveys and capacity assessment in JJRRV carried out in 2005 and 2006, and formulated a draft of Action Plan through the frequent discussions regarding necessary output and activities.

Then the Palestinian counterparts and the JICA Expert Team held a “**Workshop on Action Plan**” on December 20, 2006 aiming to get the consensus of the people in the area on the draft Action Plan.

Thus, Action Plan was finally agreed in the above workshop. The Action plan consisted of 6 components as shown in Table 2.1, and outputs and necessary activities of each component are described in Table 2.2.

It is noted that Action plan was formulated and implemented in parallel especially in year 2006. Achievement of action plan is monitored together with operation of SWM service provided by the JCspd.

Table 2.1 Components of Action Plan

Action Plan A	Raising Public Awareness
	(1) To improve public awareness of the environment and SWM (2) To disseminate the experience of JCspd JJRRV to other JCspds
Action Plan B	Improvement of Collection and Transportation System
	(1) To start-up JCspd in 2007 (2) To improve collection and transportation system
Action Plan C	:Improvement of Disposal System
	(1) Designation of the dumping site (2) Improvement of existing site and its operation (3) Prevention of illegal dumping
Action Plan D	Improvement of Maintenance System
	(1) Establishment of maintenance system for JCspd (2) Strengthening of maintenance capacity of Jericho workshop
Action Plan E	Strengthening of Organization and Institution
	(1) To prepare organization for JCspd JJRRV (2) To prepare the JCspd ordinance
Action Plan F	Establishment of Accounting System
	(1) Establishment and development of accounting system for JCspd JJRRV

Table 2.2 Action Plan

Objectives	Main issues to be tackled	Expected Output	Necessary Activities	
			Year 2006-2007	Year 2008
A. Raising public awareness Responsible Persons: Marwan Samarat & Akio Imai	1. To improve public awareness of the environment and SWM 2. To disseminate the experience of JCspd in Jericho and JRRV to other districts in Palestine	A-1: Publication of news letters, posters and leaflets A-2: To improve collection ratio of waste fees A-3: To hold community meetings to enlighten people regarding environmental awareness A-4: To conduct workshops to discuss experience of JCspds with other districts	A-1-1 To publish news letters of JCspd A-1-2 To prepare posters and leaflets to improve environmental awareness A-1-3 To conduct campaign on eradication of illegal dumping	A-1-4 To conduct campaign on sewage services A-1-5 To conduct campaign on proper treatment of agricultural waste A-1-6 To conduct campaign on proper treatment of medical waste A-1-7 To conduct campaign on eradication of illegal dumping A-2-4 To conduct campaign to improve collection ratio of waste fees A-3-3 To hold public meetings to disseminate recycling and separation of waste A-4-1 To conduct workshops to exchange ideas and information with other JCspds
			A-2-1 To conduct campaign on JCspd's activities and services A-2-2 To conduct campaign on cost of SWM A-2-3 To establish public relations section in JCspd	A-3-1 To hold public meeting to disseminate environmental awareness and importance of SWM A-3-2 To conduct tour to visit existing disposal sites
			B-1-1 To survey the present condition of collection and transportation (container location check, and time and motion survey) B-1-2 To make SWM plan for FY 2007 (target waste and service level) in 2006 B-1-3 To expand service area	
			B-2-1 To formulate SWM plan for FY 2008 (target waste and service level) B-2-2 To check the collection and transportation efficiency (Collection ratio, service area, and service level) B-2-3 To reallocate containers. B-2-4 To reallocate collection equipment. B-2-5 To introduce station collection system in a part of Jericho city. B-2-6 To improve collection system. B-2-7 To formulate SWM plan for 2009(target waste, service level.)	
C. Improvement of disposal system Responsible Persons: Wadee A Hetal & Akio Imai	1. Designation of the dumping site 2. Improvement of existing site and its operation	C-1 Formulation of short term disposal plan C-2 Study on future landfill site C-3: Improvement of Jericho dumping site	C-1-1 To prepare disposal plan for following sites in 2007 1) Jericho, 2) Al-Ojah, 3) Tovlan, and 4) Tubas C-2-1 To study possible candidate site in areas A and B	C-1-2 To prepare disposal plan for following sites in 2008 1) Jericho, 2) Al-Ojah, 3) Tovlan, and 4) Tubas C-2-2 To study future disposal sites
			C-3-1 To prepare an improvement plan C-3-2 To construct necessary facilities	

*The Project for Capacity Development on Solid Waste Management in Jericho and the Jordan River Rift Valley
Consolidation Improvement Report of Solid Waste Management*

<p>Responsible Persons: Wadee A Hetal & Hiroshi Abe</p>	<p>3. Prevention of illegal dumping</p>	<p>(Improvement operation) C-3-3 To cover with soil C-3-4 To conduct environmental monitoring C-4: Improvement of Al-Ojah dumping site C-4-1 To prepare an improvement plan C-4-2 To construction necessary facility (Improvement operation) C-4-3 To cover with soil C-4-4 To conduct environmental monitoring C-5-1 To prepare inventory of illegal dumping C-5-2 To check and monitor periodically C-6 Provision of SWM service</p>	<p>C-3-5 To cover with soil C-3-6 To conduct environmental monitoring C-4-5 To cover with soil C-4-6 To conduct environmental monitoring C-5-3 To renew the inventory of illegal dumping C-5-4 To check and monitor periodically (See collection and transportation) D-1-3 To renew maintenance contract D-1-4 To conduct monthly check of equipment at Jericho workshop D-2-4 To record operation date and hours of equipment. D-2-5 To improve operation ratio D-3-4 To conduct daily check and recording D-3-5 To provide training for operator D-4-3 To provide training for engineers and technicians E-1-6 To evaluate the present JCspd organization E-2-2 To draw up draft JCspd ordinance E-2-3 To discuss the draft ordinance of the JCspds. E-2-3 To enact JCspd ordinance</p>
<p>D. Improvement of maintenance system Responsible Person: Abdel-Jabbar & Hiroshi Abe</p>	<p>1. Establishment of maintenance system for JCspd 2. Strengthening of maintenance capability of Jericho workshop</p>	<p>D-1-1 Introduction of contract system for equipment maintenance D-1-1 To conclude contract on equipment maintenance between Jericho and the JCspd. D-1-2 To conduct monthly check and repair of equipment at Jericho workshop D-2-1 To prepare recording system D-2-2 To record operation date and hours of equipment D-2-3 To analyze operation ratio D-3-1 To prepare checklist of equipment D-3-2 To conduct daily check by operator D-3-3 To provide training for operator D-4 Provision of maintenance equipment for Jericho workshop D-4-1 To prepare equipment for monthly check D-4-2 To prepare equipment for normal repair</p>	<p>D-1-3 To renew maintenance contract D-1-4 To conduct monthly check of equipment at Jericho workshop D-2-4 To record operation date and hours of equipment. D-2-5 To improve operation ratio D-3-4 To conduct daily check and recording D-3-5 To provide training for operator D-4-3 To provide training for engineers and technicians E-1-6 To evaluate the present JCspd organization E-2-2 To draw up draft JCspd ordinance E-2-3 To discuss the draft ordinance of the JCspds. E-2-3 To enact JCspd ordinance</p>
<p>E. Strengthening Organization and Institution Responsible Persons: Abdel-Jabbar & Akio Ishii</p>	<p>1. To prepare Organization for JCspd 2. To prepare the JCspd ordinance</p>	<p>E-1 To set up the JCspd organization. E-1-1 To check the necessities for JCspd's job (2006) E-1-2 To decide the necessities for JCspd's job (2006) E-1-3 To decide the job description for 2006 - 2007 E-1-4 To establish JCspd organization E-1-5 To allocate staff E-2-1 To study the requirements for JCspd ordinance (2007)</p>	<p>E-1-6 To evaluate the present JCspd organization E-2-2 To draw up draft JCspd ordinance E-2-3 To discuss the draft ordinance of the JCspds. E-2-3 To enact JCspd ordinance</p>
<p>F. Establishment of Accounting System Responsible Persons: Ahmad Dreat and Manal Romaneen & Noboru Osakabe</p>	<p>1. Establishment and development of accounting system is essential for JCspd to obtain a proper SWM cost and rational SWM charges.</p>	<p>F-1 Introduction of a computerized accounting system F-1-1 To study the accounting system for JCspd F-1-2 To introduce the accounting system for JCspd F-2: SWM costs F-2-1 To estimate SWM costs by calculating various types of costs in line with SWM service area, collection frequency, etc. F-2-2: To estimate SWM unit cost per ton and per capita F-3: SWM charges F-3-1 Based on F-2, to set rational SWM charges (from 2006) F-4 Budget preparation and management F-4-1 To prepare yearly budget (from 2006) F-4-2 To check monthly progress of the budget and report to top management (from 2007) F-5: Fund control F-5-1 To check and forecast the cash position regularly (from 2007)</p>	<p>E-1-6 To evaluate the present JCspd organization E-2-2 To draw up draft JCspd ordinance E-2-3 To discuss the draft ordinance of the JCspds. E-2-3 To enact JCspd ordinance</p>

CHAPTER 3 WORKSHOP ON ACTION PLAN

3.1 1st Workshop: for the Public Consensus on Action Plan

The public consensus on the Action Plan was necessary before implementation. Accordingly, the workshop was held for its purpose on December 20, 2006. The contents of the Action Plan were presented by the Palestinian counterparts who were responsible for the respective action plan as shown in Table 3.1.1.

About 60 persons participated in the workshop. And the workshop ended with an expectation of the successful results of the Action Plan. Thus, the Palestinian counterparts and the JICA Expert Team finalized Action Plan as shown in Table 2.2 and started the activities toward successful implementation of Action Plan and SWM Service by JCspd JJRRV.

Table 3.1.1 Agenda of First Workshop on Action Plan

Draft Action Plan	Speakers	Organization
1. Raising Public Awareness	Madji Shomali for Marwan Samarat	PR expert, Local staff of JICA Expert Team PR staff of JCspd
2. Improvement of Collection and Transportation System	Wadee Abu-Helal	Engineer, Middle Jordan Valley JSC
3. Improvement of Disposal System		
4. Improvement of Maintenance System		
5. Strengthening Organization and Institution	Abdel-Jabbar Al-Halawa	Executive Director of JCspd
6. Establishment of Accounting System	Ahmed Shahada	Accountant, Al-Oja, New'meh & Edyuk

Source: JCspd in JJRRV

3.2 2nd Workshop on Interim Achievement of Action Plan

After ten month from the start of SWM service by JCspd JJRRV, the JCspd and JICA Expert Team held the workshop on October 17, 2007 for the purpose of broad presentation of the interim achievement of the Action Plan envisaging more than 100 participants. The program is shown in the Table 3.2.1 and presentations are shown in Annex 7

Table 3.2.1 Program of the Second Workshop on Action Plan

**WORKSHOP On
PROGRESS OF ACTION PLAN Of
DEVELOPING THE SYSTEM OF SWM IN JJRRV**

DATE and TIME: October 17, 2007 (Wednesday) 11:30 – 15:00

VENUE: Jericho Resort Valley

AGENDA:

	11:30 - 12:00	Registration Facilitator Ms. Salam Erikat, MoLG
1	12:00 - 12:15	Opening Speeches 12:00 - 12:05 Mr. Ghaleb Awatlah, General Secretary of JCspd/Head of Al-Newmeh & Edyuk L.C. 12:05 - 12:10 Mr. Kamel Hemeid, General Director of DJspd of MoLG
2	12:15 - 12:30	Strengthening of Organization and Institution.....Mr. Abdel-Jabbar Al-Halawa, Director of JCspd
3	12:30 - 13:15	1. Improvement of Collection and Transportation System 2. Improvement of Disposal System 3. Improvement of Maintenance System.....Mr. Sultan Roma, Chief of Operation Section, JCspd
	13:15 – 13:30	<i>Coffee Break (DVD: Joint-work with JCspd)</i>
4	13:30 - 13:45	Raising Public Awareness.....Mr. Marwan , Chief of Public Relations, JCspd
5	13:45 - 14:00	Establishment of Financial Management System.....Ms. Manal Romaneen, Financial Chief of JCspd
6	14:00- 14:15	Development of New System for Medical Waste Management.....Mr. Abdel-Jabbar Al-Halawa, Director of JCspd
7	14:15 – 14:45	Discussion
8	14:45 – 14:50	Closing Speech ... Mr. Tsutomu Kobayashi, Deputy Resident Representative, JICA Palestine
	15:00 -	<i>Lunch</i>

CHAPTER 4 IMPLEMENTATION OF ACTION PLAN

4.1 Action Plan A: Raising Public Awareness

4.1.1 To Improve Public Awareness of the Environment and SWM

(1) Publication of News letters, posters and leaflets

As a part of the public relations and public awareness activities of the Project, newsletters, booklets, leaflets and posters were prepared by the JICA Expert Team and the Palestinian counterparts.

1) Newsletter

The JCspd newsletter entitled "Joint" was issued 15 times since February 2006 (1,000 Arabic copies and 300 English copies). This aimed to inform the people and the institutions in JJRRV, MoLG and other Ministries as well as international donor agencies about the current activities of JCspd JJRRV.

Table 4.1-1 Newsletters

No.	Monty/Year	Contents
#1	Feb. 2006	1) What is JCspd? 2) Capacity Development Project on SWM, and 3) Opening word by Mr. Hasan Saleh, President of the JCspd.
#2	March 2006	1) General Body Meeting decisions, 2) Community Meeting and 3) Do you know JCspd activities?
# 3	August 2006	1) Message from President of the JCspd and JICA Expert Team leader, 2) Decisions made by the JCC meeting on July 26 and JCspd GB meeting on August 3, 2006, and 3) Basic Plan of SWM
# 4	October 2006	1) Results of medical waste study and agricultural waste study, 2) SWM site tour to Jericho dumping site and Tovlan Landfill site, 3) A series of community meetings held in Jericho and JJRRV, 4) JCspd organization structure, and 5) Training course in Jordan
# 5	January 2007:	1) General Body Meeting, 2) #7 JCC meeting, 3) Workshop on Action Plan, 4) Pilot Project, 5) Sites visit to Jenin landfill site, and 5) Improvement of Jericho landfill site
# 6	March 2007	1) JCspd starting ceremony, 2) Jericho Landfill construction, 3) Inspection of JCspd service, and 4) Competition of waste reduction
# 7	July 2007	1) Opening ceremony of Jericho landfill site, 2) Mid-term evaluation of the Project, 3) Summary of AB meetings' decision, and 4) #6 JCC meeting
# 8	October 2007	1) Medical waste collection, 2) Clean City Contest, and 3) SWM service start in Bardalah and Jiflik
# 9	December 2007	1) General Body Meeting, 2) #7 JCC meeting, 3) Workshop on Action Plan, 4) Pilot Project, 5) Sites visit to Jenin landfill site and 5) Extension of Jericho landfill site
# 10	March 2008	1) Workshop on JCspd in West Bank, 2) Opening of extension of Jericho landfill site,) Ceremony for 1-Year anniversary of JCspd service, and 4) Pilot Project for recycling of agriculture plastic
# 11	July 2008	1) AB election, 2) New vehicles: patrol car and backhoe loader, 3) Palestine Council for SWM, and 4) Terminal evaluation
# 12	January 2009:	1) AB meetings, 2) GB Meetings 3) 2 Workshops in Tulkarem and Bethlehem 4) Holding more community meetings 5) New SWM Barrels for the Northern Area 6) A Workshop for the Supervisors of the Schools in JJRRV 7) Restart of collection of SW in the North.
# 13	Feb 2009	1) JCC 12 meeting 2) Workshop for the 11 Joint Councils 3) Site Visit 4) Assignments in the Joint Councils of the West Bank 5) Activities of the FuC 6) Holding more community meetings
# 14	Sept. 2009	1) Delivery of new equipment, 2) Implementation of new collection system, 3) New waste amount survey, and 4) Semi annual financial report
# 15	January 2010	1) Signing of Terminal Evaluation Report, 2) Approval of JCspd budget 2010, 3) Social Survey regarding SWM in JJRRV

2) Leaflet

Leaflets were issued 14 times in Arabic. The objective of the leaflets was to raise awareness of the people in JJRRV on SWM, environmental protection in general and SWM service in JJRRV to support the JCspd operation.

Table 4.1-2 Leaflets

No.	Monty/Year	Title
# 1	February 2006	:How to deal with garbage
# 2	August 2006	Together for better environment
# 3	October 2006	SWM cost and the fees
# 4	December 2006	Competition of waste amount reduction
# 5	March 2007	Development of the JCspd
# 6	September 2007	Clean City Contest
# 7	October 2007	Medical waste
# 8	February 2008	Jericho Landfill Site/ English and Arabic
# 9	March 2008	Home Compost
# 10	August 2008	3Rs, about reduce, reuse and recycle of waste
# 11	August 2008:	Positive involvement of citizens
# 12	March 2009	The result of "the willingness to pay survey"
# 13	October 2009	Climate change and solid waste
# 14	January 2010	Proper disposal of household waste

3) Booklet

Booklets were issued 11 times. These leaflets and booklets were distributed to government institutions, community organizations, schools and people who are interested in SWM and participated in the series of community meetings.

Table 4.1-3 Booklets

No.	Monty/Year	Title
# 1	August 2006	Basic Plan
# 2	February 2007	Guide on Solid Waste Management
# 3	March 2007	Introduction of 17 LAs
# 4	March 2007	Result of waste reduction idea competition
# 5	August 2007	100 community meetings organized
# 6	October 2007	Palestinian regulations and rules related to SWM
# 7	March 2008:	Medical waste and temporary system for the collection in JJRRV
# 8	March 2008:	Solid Waste for children
# 9	March 2008	Annual Report 2007 of JCspd
# 10	March 2009	Annual Report 2008 of JCspd
#11	January 2010	Palestinian regulations and rules related to SWM (Reprint)

4) Poster

Eleven (11) types of posters were prepared. These posters aimed to enlighten people regarding environmental awareness in related the JCspd's activities and SWM in particular.

Table 4.1-4 Poster

No.	Monty/Year	Title
# 1	September 2006	Partners for a better life
# 2	October 2006	The citizen, the LA and JCspd, as partners for sustainable services
# 3	October 2006	Municipality and villages... one Joint future... one Joint Council
# 4	December 2006	Start-up of JCspd service
# 5	December 2006	Competition for Waste Reduction Idea
# 6	September 2007	To announce the CCC and urge citizens to support the organizations

# 7	February 2008	To announce the "My Bag Campaign"
# 8	February 2008	Function of Jericho landfill site after the extension project (70 cm x 100 cm)
# 9	March 2008	To guide the medical waste treatment
# 10	March 2008	To introduce a map of JJRRV and location of the landfill site and pictures of technical staff and vehicles
# 11	April 2008	Composition o SWM fees

(2) Video Production

1) JCspd Establishment History

The JICA Expert Team produced a 17 minutes documentary film about the JCspd in JJRRV. The film covered the establishment history of the JCspd and daily activities in JJRRV. The film targeted the local communities to raise awareness of the importance of the establishment of the Joint Council. The film also covered the important events such as seminar/workshop, the start-up ceremony of the JCspd service, solid waste reduction idea competition, speech contest, Administrative Body meeting, General Body meeting, several community meetings, solid waste worker training, site visit tours, interview to Mayor, executive director, JICA Expert Team leader, and solid waste workers. The film is produced in Arabic language with subtitle of English and screened in the most of community meetings.

2) Documentary Film: JCspd Activities:

This film covers all JCspd activities such as workshops, 1-year anniversary ceremony, opening the landfill site extension, community meetings, site visits, JCspd facilities, and voluntary works.

3) Translation of "Tokyo Disposal Site"

JICA Expert Team translated "Tokyo Disposal Site" produced by Tokyo Metropolitan Government into Arabic, screened in the most of the community meetings and broadcasted three times by the local TV.

4) Translation of "Semi-aerobic landfill (Fukuoka Method)"

The JICA Expert Team translated into Arabic and inserted Arabic voice on a scientific film about Fukuoka Method produced by Fukuoka University to introduce semi-aerobic landfill site. In August 2007, 100 DVD copies were produced and distributed to all other JCspd, municipalities and organizations related to SWM.

5) Commercial Film: The Importance of Paying SWM Fees

One minute commercial film was produced and broadcasted 210 times (7 times in 30 continuous days) through 8 local TV stations in 8 governorates from February 12 to March 14, 2008 as a part of support to the JCspd in the West Bank and the municipalities that face the financial issues.

6) Monodrama

The comedy monodrama with a 3 minutes song was edited into DVD in September 2007 and presented to 150 attendees of citizens and youth at the Municipal Hall of Jericho. Afterwards the original DVD was copied to 100 DVD. The copies were used to screen to the attendees of the community meetings before the start of the discussions and distributed also to all other JCspd, municipalities and organizations related to SWM.

7) Educational Film

An educational 14-minutes film about the waste reduction, recycle and re-use was edited into DVD with subtitle of English in March 2008. 100 copies were produced and distributed to

all other JCspd, municipalities and organizations related to SWM.

(3) Waste Reduction Campaign

1) Competition for Waste Reduction Idea and Speech Contest

The competition for the waste reduction idea started in January 2007 among the school students and citizens. The objectives of the competition were to make them aware of the environmental issues. In total, 13 explanation meetings were held at the various schools.

The deadline of the proposal of the idea was March 6, 2007. More than 1,000 ideas were proposed by the students. The committee organized by Ministry of Education, UNRWA school, the JCspd and the JICA Expert Team selected 4 good ideas on March 7. The awarding ceremony was held on March 11 at the Jericho municipality hall. At the same time, the speech contest between 2 selected speakers was held. One poster and one leaflet were printed for this contest.

2) Clean City Contest (CCC)

The CCC started in June 2007. A technical committee consisted of 8 members was formed to supervise the contest; members were from the JCspd, JICA Expert Team, Ministry of Education (MoE), Ministry of Health, MoLG, Governorate of Jericho, Environment Quality Authority (EQA) and Ministry of Tourism.

Several community meetings were held as part of the raising awareness strategy. During these meetings, the CCC idea was presented and the participants were encouraged to organize voluntary works.

3) My Bag Campaign

The idea of this campaign was to encourage citizens in using cloth bags and refusing nylon bags to reduce solid waste. The campaign was succeeded to get partnership from 9 shop owners and 2 women organizations in Jericho city and started on 23rd of February 2008 for one month. 1,000 cloth bags were prepared and distributed to the shops. The shops cooperated with the campaign by discounting 3-5% of their sales when customer came and used the cloth bags in the shop.

A meeting was held for the shop owners to illustrate the campaign and the role of each part. Two (2) women organizations participated in raising awareness among their members and held 2 meetings to illustrate them the campaign.

300 posters and 2,000 leaflets were published especially for the campaign. The slogan of the campaign was printed on the side of the bag. The bags were also distributed to the citizens who attend the community meetings.

4) Solid Waste Management Site Tour

As a part of public relations activities, nine (9) times of site tours were organized to raise awareness of citizens about SWM and reduction of waste through reduce, reuse and recycle.

Table 4.1.5 SWM Site Tour

No.	Monty/Year	Place
# 1	October 2006	Jericho landfill site and Tovlan landfill site
# 2	November 2006	Jenin landfill site
# 3	March 2007	Jericho and Jenin landfill site
# 4	July 2007	Recycling factory in Hebron and Bethlehem
# 5	November 2007	Recycling factory in Hebron and Bethlehem
# 6	December 2007	Jericho landfill site and Jenin landfill site
# 7	March 2008	Jericho landfill site, Jenin landfill site and Nablus recycle station
# 8	August 2008	Jenin landfill site and Nablus recycle station
# 9	October 2009	Jenin landfill site and Nablus recycle station

5) Banners

40 banners of area map were prepared and distributed to the 17 LAs.

6) Supporting Voluntary Works related Solid Waste Collection and Recycling

A friendship sports event was held in Jericho city on September 28-30, 2006, as a part of the official public relations activities of JICA and the Japanese Government. The objective of the event was to strengthen the relationship between Japan and Palestine. The JICA Expert Team took this opportunity to screen a slide show in the stadium as a part of the public awareness campaign. The slide show aimed to inform the people of Jericho on the newly-established JCspd and its activities and services. In addition, scout group volunteers helped the clean up campaign in the stadium. For this sports event, the JICA Expert Team prepared special caps with the JCspd logo, and 1,000 caps were distributed to those participating in the event.

4 student voluntary groups to collect garbage on the streets and in the park were organized by the JICA Expert Team. On February 21, 2007, these 3 groups contributed to collect garbage in front of the Spanish Garden and the surrounded streets. Another voluntary group contributed to plant trees around the Jericho landfill site. The JICA Expert Team provided the students with special caps and scarves printed with the JCspd logo.

7) Website

The website of the JCspd (www.jcspd-jericho.org) was established in March 2006 with the support of the JICA Expert Team. The customer relations division of the JCspd updated the website from August 2007 when the updating task was shifted to the JCspd.

The public relations activities of the JCspd were explained on the website. The web site became a resource for all information and educational material for all the JCspd and municipalities working in the environment field. The website of the JCspd had a link to Jericho municipality website.

(4) **Community Meetings**

A series of community meetings were held in all LAs of the members of JCspd JJRRV as a part of the public awareness activities of the Project. Following issues were explained and discussed in the meetings. The Palestinian counterparts/JCspd staff took a main part and played actively and aggressively.

- The importance of the JCspd
- The JCspd's roles and services
- Organization and administration of the JCspd
- The mechanism of SWM
- The citizen's role in SWM

- Cost and fees for SWM

A total of 207 community meetings were held in JJRRV during the period from November 2005 to January 2010 as shown in Table 4.1.6. General feature of community meeting was shown in Table 4.1.7

Table 4.1.6 No. of Community Meetings held during Nov. 2005 and Jan. 2010

Year	Period	No. of Community meetin
1 st year (2005/2006)	Nov. 2005 to Mar 2006	7 times
2 nd year (2006/2007)	July 2006 to March 2007	87 times
3 rd year (2007/2008)	March 2007 to March 2008	72 times
4 th year (2008)	March 2008 to Aug 2008	16 times
4 th year Extension (2008/2009)	Sept. 2009 to March 2009	21 times
5 th year Extention (2009/2010)	March 2009 to January 2010	4 times
Taotal		207 times

Table 4.1.7 Outline of Community Meetings

<p><u>General</u></p> <ol style="list-style-type: none"> 1. An educational translated film about SWM in Tokyo was screened in most of the meetings. 2. Banners, leaflets and posters were distributed. 3. Remarks from the attendees were collected. 4. The meeting was an opportunity to announce the competition and to clarify the idea of the voluntary work. 	<p><u>About JCspd and the LAs</u></p> <ol style="list-style-type: none"> 1. The LAs were happy and convinced with the stable service. 2. The LAs were not getting any support from the Government; this effected the payment of fees to the JCspd. 3. The LAs had no mechanism neither employee to collect fees. 4. The LAs preferred to have assistant from the JCspd in the collection process. 5. The LAs were suffering from the lack of authority / police; this made implementation of rules difficult.
<p><u>About Fees</u></p> <ol style="list-style-type: none"> 1. People were convinced to pay the SWM fees 2. Some villages thought that fees amount was high 	<p><u>About Citizens and Collection System</u></p> <ol style="list-style-type: none"> 1. Citizens were very happy from the regularity of service. 2. Citizens were happy that the JCspd /JET were seriously interested in their opinions. 3. Citizens expected to have garbage plastic bags free of charge. (Monthly cost was 6 NIS/family.) 4. Only Jiftlik LA still considered the SWM not a priority. 5. Citizens understood their role to adapt discharge of waste according to the collection timetable. 6. Citizens suggested that the JCspd to supervise purchasing and distributing 50liters barrels to all houses. 7. Citizens preferred to see waste containers working.
<p><u>Students Meetings</u></p> <ol style="list-style-type: none"> 1. Students and teachers showed much interest in the JCspd projects 2. Students were aware the importance of a clean environment. 3. Students were aware of recycling of waste: glass, plastics, paper and organics. 4. Students were aware of the necessity of cooperation between citizens and the LAs in any future separation process. 5. Students were aware of the dangers resulted from: wrong dealing and burning garbage. 6. Students were aware of the necessity to reduce amount of garbage. 7. Students understood the need of fees in sustainability 	

1) Community Meetings in First year

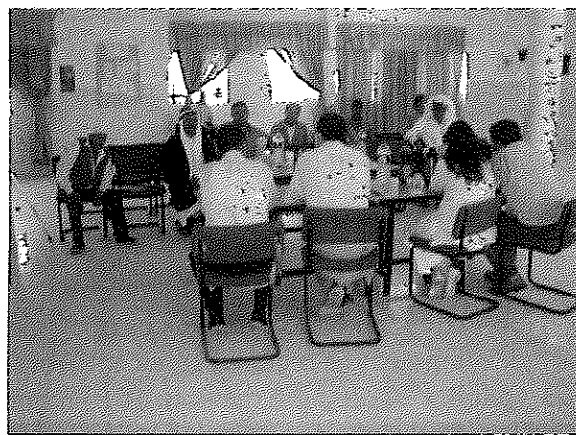
After the newsletter and leaflet were prepared, the JICA Expert Team and Counterparts in cooperation with Applied Research Institute-Jerusalem (ARIJ) organized seven public awareness community meetings with the participation of several groups of the society. The meetings embraced the slogan “Partners in Protecting Environment” and they aimed to introduce the activities of the Project to the public and to facilitate public awareness on SWM. The meetings were held four times in Jericho Municipality and three times in other LAs (Bardalah village council, Al-Ojah local council and Al-Jiftlik village council).

2) Community Meetings in Second year

The public meetings were held in Jericho and JRRV to disseminate the idea of the JCspd and its SWM services. A total of 87 community meetings were held in 2nd year during the period from July 2006 to March, 2007. The meetings were held in all LAs of the members of the JCspd.



At secondary school on 11th of March 2007



At Aqbat Jabar Camp on 3rd of September 2006



At Ihasan Society on 6th of September 2006



At Beit Hassan on 7th of February 2007

Figure 4.1.1 Community Meetings

3) Community Meetings held in 3rd Year

A total of 72 meetings were held in the 3rd year from April 2007 until the end of March 2008 in JRRV of which 36 meetings held in Jericho, 32 meetings in JRRV and 4 meetings at refugee camps. Village councils were targeted in 9 meetings, communities were targeted in 42 meetings and students were targeted in remaining 21 meetings.

4) Community Meeting held in 4th Year

A total of 16 meetings were held in the 4th year from April until August 2008 in JJRRV. Community Meetings also aimed for raising the Public Awareness of residents in the field of SWM and to urge people to pay their contributions regarding the SWM collection.

A social survey was conducted in July 2008 making 100 interviews to the residents of LAs in JJRRV excluding Jericho Municipality. The result of survey showed that 70% of residents knew the service of JCspd and 66 % paid the service fee.

5) Community Meetings held in the Extension Term

A total of 25 Community meetings were held in the extension term from September 2008 until January 2010 in JJRRV: Community Meetings were effective for raising the public awareness of residents in the field of SWM and to urge people to pay their contributions regarding the SWM collection.

Second social survey was conducted in December 2009 making 150 interviews in all LAs including Jericho municipality. The result of survey showed that 67 % of residents knew the Service of JCspd (79 % of residents excluding Jericho Municipality) and 81 % of residents paid the service fee.

4.1.2 Dissemination of JCspd JJRRV Experiences

(1) Workshop of 11 JCspd

1) The First “Workshop of 11 JCspd in West Bank”

To disseminate the experiences of JCspd JJRRV in the field of solid waste management and development of regional service, “Workshop on Progress of Action Plan” was held on October 17, 2007 at the time of 10 month after starting of the SWM service by JCspd JJRRV. The workshop was attended by 100 participants from national and regional government, JCspd in West Bank, international donors, and the other organizations related to SWM.

The First “Workshop of 11 JCspd in the West Bank” was held on February 4, 2008 with 60 participants including 11 JCspd in the West Bank. The objectives of the workshop were as follows.

- (1) To diffuse the experiences of JCspd JJRRV to other JCspd in the West Bank
- (2) To enhance the cooperation among the Palestinian JCspd
- (3) To define activities that can be jointly implemented for the benefit of the Palestinian JCspd

As a result of the First Workshop, a follow-up committee (FuC) was formed with following members. The FuC will forward the recommendation and action plans for disseminating of experience including preparation of the Second Workshop.

Table 4.1-8 Follow-up Committee (FuC) of 11 JCspd Workshop

Name	Position	Name	Position
1. Yasser Dweik	Executive Director of Hebron JC (South)	4. Hani Shawahnah:	Executive Director of Jenin JC(North):
2. Abdul Jabbar Abu Halawa:	Executive Director of Jericho JC (Mid. East)	5. Majdi Shomali (Coordinator)	JICA Expert Team
3. Abed Jebariya*	President of Ramallah JC (Middle)	6. Kamel Hmeid	General Director of DJCspd (Support)

Note: Fro Rakallah JCspd, President will continue until Executive Director is appointed.

2) The Second “Workshop of 11 JCspd in the West Bank”

The FuC meeting was held on April 8, 2008, and prepared a draft paper on activities for the exchange of experience among the JCspd for SWM. The draft paper was presented in the Second Workshop held on May 19, 2008.

The Second “Workshop of 11 JCspd in the West Bank” was held on May 19, 2008 for preparation of the establishment of “the Palestinian Council for Solid Waste Management (PCswm, tentative)” at the Palestinian Red Crescent Hall in Ramallah.

An idea of establishment of a Palestinian Council for SWM (PCswm) was arisen among the FuC aiming to create a mechanism for exchange of experiences and develop the SWM sector in Palestine. In the Second “Workshop of 11 JCspd in the West Bank”, a proposal of FuC for the establishment of PCswm and its activities was discussed among the participants. It was affirmed that participants were convinced of the importance of establishing a body to develop SWM sector. It was also accepted that establishment of this body was based on the law of Local Authorities of 1997 and need to draft internal regulations.

The Internal Regulation Committee was formulated in the Second Workshop consisted of following members.

Table 4.1-9 Member of Internal Regulation Committee

Name	Position	Name	Position
1. Yasser Dweik	Hebron JC	2. Raed Samara	Bethlehem JC
3. Ekrema Samara	Salfit JC	4. Basil Bani Oada	Toubas JC
5. Abdul Nasser Makky	JICA	6. Majdi Shomali	JET
7. Kamel Hmeid	DJCspd		

Bethlehem JC;

3) The Third “Workshop of 11 JCspd in the West Bank”

The Internal Regulation Committee Meeting was held on May 29, 2008. The Committee prepared a draft paper of internal regulation for PCswm and submitted at the Third “Workshop of 11 JCspd in West Bank” held on June 24, 2008.

The Third “Workshop of 11 JCspd in the West Bank” was held on June 24, 2008 at the Palestinian Red Crescent Hall in Ramallah to discuss on establishment of PCswm and the draft paper of internal regulation prepared by the internal regulation committee formed in the Second Workshop

The Workshop has 60 participants from JCspd in West Bank, MoLG, EQA, JICA, GTZ, UNDP, and Local Authorities. The issues of the formation of the PCswm were discussed but not matured yet. However, there were consensus on the followings:

- (1) There was a framework comprising 11 JCspd’s Presidents to meet when necessary.
- (2) There was a framework comprising 11 executive director to meet and discuss periodically.
- (3) The agreed goals could be accomplished through activities of the workgroup or the committee. This committee was the Follow-up Committee (FuC) that was formed at the First workshop

4) The Fourth “Workshop of 11 JCspd in the West Bank”

The fourth workshop of the 11 JCspd in the West Bank was held on February 26, 2009 in Ramallah and attended by 40 participants from all the West Bank. Progress of the National Strategy and on going project was presented and necessary activities for 11 JCspd were discussed.

5) The Fifth “Workshop of 11 JCspd’ in the West Bank”

The fifth “Workshop of 11 JCspd’ in the West Bank” was held on October 21, 2009 at Jericho Resort and discussed the situation of each JCspd. The site tour on the following day of October 22 to the Jenin landfill site and the Nablus transfer station was conducted with participation of residents in Jericho and Jerusalem.

6) The sixth “Workshop of 11 JCspd’ in the West Bank”

The sixth “Workshop of 11 JCspd’ in the West Bank” was held on January 24, 2010 at Ankar Suite Hotel in Ramallah and attended by 30 participants from all the West Bank. Progress of the Follow-up Study 2 was presented by MoLG and activities of JCspd in Bethlehem, Tulkarem, Salfit, Tubas and Nabulus were presented in the workshop.

(2) Seminar on Solid Waste Management

A Seminar on Solid Waste Management was held on August 4 and 5, 2008 at City Inn Hotel in Ramallah aiming to enhance the role of the Joint Councils and to learn from Palestinian and International Experiences.

Dr. Yoshida, Senior Adviser of JICA, and Mr. Ikeguchi, Japanese Expert on Solid Waste Management, presented the JICA’s policy to support developing country in SWM Sector and importance to have mechanism to learn successful experience of LAs and JCspd in Palestine, and also to encourage to develop SWM sector.

(3) FuC Meeting

On July 15, 2009, the FuC meeting was held at the office of the DJCspd of MoLG; the readiness of the JCspd’ in Bethlehem, Salfit, and Tulkarem to start offering the service of SWM was discussed; especially the delivery process of equipment donated by the Japanese Government through the UNDP. Furthermore, the FuC discussed the main points of Follow-up Study in 2009/2010 which was financially supported by JICA.

The meeting was attended by engineer Waleed Halayka, engineer Yasser Dweik, engineer Hani Shawahneh, Mr. Mizutani, Mr. Abdel Jabbar Abu Halawa, in addition to the DJCspd staff in MoLG.

4.2 Action Plan B: Improvement of Collection and Transportation System

4.2.1 Start-up JCspd Service in 2007

To start-up JCspd service in 2007, Basic Plan and SWM Plan of year 2007 were prepared. Based on these two plans, SWM service of JCspd JJRRV was provided from January 2007.

(1) Basic Plan for JCspd Service

In order to start the JCspd solid waste collection service, "the Basic Plan" was formulated. The Basic Plan was what was called the basic concept of the JCspd operations on SWM and preparations for the start-up including the collection and transportation plan.

The Basic Plan was discussed and approved by the Administrative Body (AB) meeting held on August 3, 2006. The Basic Plan consisted of the following items (See Annex 2).

1. SWM Service in JJRRV
2. Scope of SWM services to be transferred to the JCspd
3. Establishment of SWM System
 - (1) Action Plan of Transfer
 - (2) Transfer/acquisition of facilities and equipment
 - (3) Budget and source of funds
 - (4) Recruitment of JCspd Staff
 - (5) Establishment of Management Rules and Regulation
4. Property and Initial Funds
5. Comprehensive SWM in the Area
6. Employment Status of JCspd Staffs

(2) SWM Plan of Year 2007 and 2008

SWM Plan for FY 2007 (SWM Plan) was an essential concept of JCspd operation on SWM in year 2007. The SWM Plan was consisted of 5 items of 1) target waste, 2) service area, 3) service type, and 4) facilities necessary for the JCspd and (5) arrangement of vehicles and equipment. The SWM Plan in 2007 was discussed and approved by AB meeting held on August 3, 2006 (See Annex 3). SWM Plan in 2008 was prepared together with the budget in 2008 (See the details in Annex 4).

(3) Collection and Transportation Plan

Collection and transportation plan was prepared based on the SWM plan of year 2007.

1) Target Waste

JCspd dealt with only domestic and commercial/institutional waste in year 2007 as shown in Table 4.2-1.

Table 4.2-1 Target Waste of JCspd for Year 2007

Category	Generation (ton)	Service area	Collection and transportation	Disposal
Domestic waste	50	All target area	JCspd	Dumping on Landfill site
Commercial waste	5	Jericho	JCspd	Dumping to Landfill site
Agriculture waste		To be studied		
Hospital waste	0.1	Hospitals , Clinics	Ministry of Health	---
Night soil (sewerage)	40-50	---	Private sector with charges of collection	Dumping to Landfill site (tentatively)

Source: Basic Plan of JCspd prepared by CP and JICA Expert Team

2) Service Area and Collection Frequency

JCspd covered all area of 17 LAs as shown in Table 4.2-2. JCspd collected 6 times a week in Jericho; however, twice a week in other LAs.

Table 4.2-2 Service Area and Frequency of JCspd for Year 2007

Collection Area(in localities)		Collection Frequency	Disposal site
Jericho and the Refugee camps	Jericho	6 times/week	Jericho
	Refugee camps	Twice/week	
Auja, Duke, Nwemeh, Fasayel	Duke, Nwemeh,	Twice/week	Al-Ojah
	Auja, Fasayel	Twice/week	
Middle JRRV	East side	Twice/week	Tovlan
	West site	Twice/week	Tubas
Bardala, Kardala, Ein Beda		Twice/week	

Note: Use of disposal site will be changed when new disposal site will be constructed.

Source: Basic Plan of JCspd prepared by CP and JICA Expert Team

3) Service Type

JCspd provided the secondary collection and dumping services in year 2007 as shown in Table 4.2-3. It should be noted that JCspd started its operation with minimum number of staff so that JCspd neither do the primary collection nor the street/park cleaning in the starting year of 2007.

Table 4.2-3 Service Type of JCspd for Year 2007

Areas	Primary collection	Secondary collection	Dumping	Street and Park
Jericho Municipality	×	○	○	×
Other LAs	×	○	○	×

Note: 1)○: by JCspd, ×: not by JCspd, 2) Primary collection means collection from house to container. Secondary collection means transportation from container to dump site.

Source: Basic Plan of JCspd prepared by CP and JICA Expert Team

4) Facilities Necessary for JCspd

JCspd used 3 disposal sites as shown in Table 4.2-4 in year 2007. JCspd contracted with Jericho Municipality on usage of workshop for repair of vehicles/equipment. Offices and garages were prepared respectively both in Jericho and middle/north area.

Table 4.2-4 Facilities necessary for JCspd

Facility	Place name	Remarks
Final Disposal Site	Jericho	To cover soil
	Al Ojah	To cover soil
	Tovlan	(not used)
	Tubas (Jenin)	To pay dumping fee
Transfer station	Tubas	—
Work Shop	Jericho	To contract with Jericho Municipality
Office	Jericho	To be rent or other preparation
	Middle and North	To be prepared
Garage	Jericho	In work shop
	Middle and North	—

Source: Basic Plan of JCspd prepared by CP and JICA Expert Team

5) Arrangement of Vehicles and Equipment

The number of vehicles and equipment owned by LAs were shown in Table 4.2-5. These vehicles and heavy equipment were transferred to JCspd until the start-up date of JCspd

operation.

Table 4.2-5 Vehicles and Heavy Equipment

Items	Location	Type	Capacity	Number
1. Vehicle	Jericho	Compactor	8 m ³	2
		Container Carrier	4 m ³	1
			8 m ³	2
		Total		5
	Al-Oja	Compactor	5 m ³	1
	M JRV	Compactor	5 m ³	1
	Bardalla	Compactor	5 m ³	1
Total				8
2. Heavy Equipment	Jericho	Truck Loader	120 PS	1
3. Container	Jericho		1.1 m ³	137
			4.0 m ³	24
			8.0 – 12.0 m ³	52
			Total	213

Source: CP and JICA Expert Team

(4) Short-term Collection and Transportation Plan

Based on the above Basic Plan and SWM plan in 2007, collection and transportation plan was prepared to provide collection service to all 17 LAs as shown in Table 4.2-6 considering available equipment and final disposal sites.

At the time, only Al-Ojah and Fasael had containers that capacity were 0.6 m³ and were suitable for small compactor vehicle. Other LAs had no such containers. Therefore, JCspd was providing service in following manner although many LAs requested to provide containers by JCspd.

- LAs could use any household container.
- JCspd collected waste from each house (door to door collection) in principle.
- When the new collection vehicles were delivered through UNDP, available containers would be provided.

Table 4.2-6 Short-term Collection and Transportation Plan

Place	Present situation	After 2007
Jericho	Collection service is provided by Jericho Municipality	Same collection service will be provided by Jericho Municipality (Primary collection) and JCspd JJRRV (secondary collection and transportation).
Auja, Duke, Nwemeh,	Irregular service by both LAs	Regular collection service will be provided (twice a week)
5 LAs in Middle west	Collection using tractor	Regular collection service will be provided (twice a week)
Other 9 LAs	No collection service	Regular collection service will be provided (twice a week)

(5) Implementation and Expansion of Service Area

The JCspd covered all 17 LAs at the starting services in January 2007; however the JCspd suspended the services to the 3 LAs (Jiflik, Froosh Beit Dajan and Bardala) afterward from the beginning of April 2007 because of no fees payment from them. The JCspd has a policy to provide the service only to the LAs which pay the fees.

The JCspd made efforts to re-start the service in these 3 LAs by providing the PR activities including intensive dialogue with the head, council members and communities. As a result,

the services re-stated in Bardalah and a partial area of Jiftlik in August 2007 and in partial area of Froosh Beit Dajan in November 2007. Table 4.2-7 presents the service coverage of JCspd after January 2007.

The JCspd suspended the service again in 5 LAs (Jiftlik, Froosh Beit Dajan, Bardala, Kardara and Ein Al-Beida) from January 2008 due to the reason mentioned above: Obviously the JCspd required to make effort continuously to re-start the services in these 5 LAs.

Three LAs in north area and the JCspd made intensive discussion to re-start the service and agreed to prepare barrels then re-start the service from January 2009. Accordingly, JCspd was providing the service to 16 LAs from January 2009.

Table 4.2-7 SWM Service by JCspd

Name of LA	SWM Service until 2006	SWM Service in 2007	SWM Service in 2008	SWM Service in 2009
1. Jericho	6 times a week by Municipality	6 times a week by JCspd	6 times a week	6 times a week
2. Al-New'meh & Edyuk Al-Foqa	Twice a week by JSC	Twice a week by JCspd	Twice a week	Twice a week
3. Al-Ojah				
4. Fasayel	No service			
5. Al-Jiftlik	No service	Twice a week by JCspd. Stop of service in Jan. 2007. Re-start in partial area on Aug. 2007			Twice a week in partial area	Twice a week in partial area
6. Zbidat	No service	Twice a week by JCspd	Twice a week	Twice a week
7. Marj Al-Ghazal				
8. Marj Na'jeh				
9. Ein Al-Bidah	No service	Twice a week by JCspd. Stop of service in April 2007. Re-start in August 2007.	Re-started in August 2007. Suspended again from January 2008	Re-start the service in January. Twice a week
10. Kardalah				
11. Bardalah				
12. Froosh Beit Dajan	No service	Twice a week by JCspd. Stop of service in Jan. 2007. Re-start in Nov. 2007	Re-started from October 2007 but stopped again from January 2008	No service. JCspd. Continuing contact with council.
13. Ein Shibli	After June 2006	Twice a week by JCspd	Twice a week	Twice a week
14. Nawaji	by JSC			
15. Beit Hasan	Service by tractor			
16. Al-Nassaryyah				
17. Al-Aqrabanyyah	3 times a week			
Two refugee Camps in Jericho	Twice a week by Jericho Municipality	Twice a week by JCspd	Three times a week	Three times a week

Source: Jcspd

4.2.2 To Improve Collection and Transportation System

(1) Collection Improvement

The objectives of this action plan aimed to improve the collection and transportation system of the JCspd by optimizing the collection time, collection route, placement of equipment and containers, and position of staff and workers.

Originally, this improvement plan was programmed to be carried out in October 2007 when the new vehicles and equipment was delivered through Japanese Grant Aid Project. In 2006, it was decided that new vehicles and equipment would be delivered through UNDP funded by Japanese Government. However, the delivery was delayed and it was delivered in September, 2009. Accordingly, this plan was carried out on that time.

(2) Start of New System for Solid Waste Collection in Jericho City

Regarding three 12 m³ compactors, delivered in September 2009, one was put into service in Jericho city. Another two were put also in Jericho city from November 2009.

Since the date of the above delivery, JCspd JJRRV was implementing a new waste collection system in some neighborhoods in Jericho city, where big size containers were being replaced with small containers. Replacement of the containers in other neighborhoods in Jericho city was completed in December 2009 as shown in Table 4.2-8.

Table 4.2-8 New Collection System in Jericho City

Stage	Area	Change and new system
1 st	West area	Replace large container to small container (Use small container system instead of hauled container system). Distribution of small container
2 nd	South area	Replace large container to small container. Distribution of small container
3 rd	East area	Mix with middle size container (4 m ³) and small container

Source: JCspd JJRRV



Figure 4.2-1 Replacement of Containers in Jericho City

(3) Manual for Solid Waste Collection and Transportation

The JCspd staff/workers and the JICA Expert Team discussed the contents of manual and prepare the Manual for solid waste collection and Transportation. The Manual was submitted on March 2009.

(4) Pilot Project for station collection using garbage bag

This pilot project was carried out from the middle until the end of December 2007 in Jericho city and summarized below.

1) Objective and Goals

The overall objective of the pilot project was to test a new collection system without using the solid waste containers.

The specific goals of the pilot project were to:

- Identify the possibility of solid waste collection without using the containers.
- Examine the level of cooperation of the community with the JCspd in case of container collection system troubles.

- Train the JCspd workers how to manage the solid waste collection in emergency conditions.
- Study the best collection system to be applied in the JCspd areas.

2) Selected Area

Four quarters of Jericho city with 250 houses were selected as shown in Table 4.2.9. The station collection and transportation was implemented in late December 2007 after direct visit explanation by the JCspd staff.

Table 4.2.9 Selected Area of Pilot Project

No	Name of Quarter	Houses	Implementation Days
1	Al-Dahyah	100	6 days
2	Mohammad Al-Dorah Street	50	6 days
3	East Ketf Al-Wad	27	3 days
4	West Ketf Al-Wad	73	2 days

Source: JCspd

3) Results

Results from the data analysis for this pilot project showed that the JCspd could apply such system in both normal and emergency cases, taking into consideration of the public awareness and the mentality of the community. And it was advisable to carry out this pilot project in other areas, especially in the rural areas where the mentality of the community was assumed that presence of container was essential for SWM.



Withdrawal of container



Station collection of garbage bag

Figure 4.2.2 Pilot Project for Station Collection

(5) Use of Barrel for solid waste collection in North

JCspd service was stopped in the north area, Ein beida, Kardara and Bardala, because of no payment of service fee. LAs were explained that residents needed container for collection and they did not accept the service and payment without the container. JCspd and LAs discussed and agreed that:

- JCspd delivered barrels on the condition that LAs would pay half of the cost of it in advance and JCspd bore remaining half.
- LAs would pay 100 % service charge of them after restarting the service.

Based on this agreement, JCspd re-started the service in the north area from January 2009. Accordingly, JCspd was providing collection service to 16 LAs from January 2009. JCspd

used following three collection systems in the area.

Table 4.2-10 Collection Method in JJRRV

Items	Middle and Large container	Small container	Barrel and other
Capacity of container/barrels	4 m ³ 8-10 m ³	1.0 m ³ 0.6 m ³	40-60 liter
Place	Jericho for Large amount discharger	Jericho, Al-Ojah, Fasael	Other Las
Collection vehicle	Hauled container vehicle	Compactor vehicle 8-12 m ³ or 6 m ³	Compactor vehicle (door to door collection)
Advantage	Efficient loading if amount is large	Efficient loading Common in West Bank	Easy to keep clean and maintenance of container (by resident.)
Disadvantage	Residents shall bring their waste to container (long distance) or Primary collection is required if used for residential area.	Residents shall bring their waste to container (not so long distance) Difficult to maintain container	Container will be broken and waste will be littered by dog and cats. Low efficiency (door to door)

(6) Situation of Solid Waste Collection in December 2009

Time and Motion study was conducted for all collection vehicles and area. Table 4.2-11 showed number of collection point, containers and working time in Jericho municipality and in rural area. Collection service was conducted smoothly and efficiently. However, further cooperation of residents on proper discharge of solid waste would be necessary to built-up clean city.

Objective of solid waste management was to provide satisfactory collection service for the citizens. This “satisfactory collection service for the citizens” was a synonym for “being sustainable project”. From the view point of “satisfactory collection service”, JCspd provided sincere and consistent collection service for citizens. Moreover JCspd solid waste management spirit was taking root on workers.

Jericho city area and part of Al Ojah, Fasael, Duke & Nimea area was using 1m³ containers. However 1m³ container using collection system had a little bit maintenance difficulty. For example JCspd had to take care of appropriate containers placement continuously and make repairs them. And citizens also had to clean the surrounding of containers. JCspd was establishing reliance on nice collection service for citizens.

Table 4.2-11 JCspnd Waste Collection Summary

No.	Local Authority	Collection day	Survey date	Time (working hour)	Driver / Worker	Collection type	Collection vehicle	Km	Trip	goal
1	Jericho	Compactor (Day Shift)	11/22	9:10-12:40 (3:30)	Ibrahim Judah(D)	Container 1m3	Compactor(UNDP)	34.7	1	Jericho
			12/9	8:10-12:11 (4:01)	Salim Grooff(W) Mohamed Nasir(W)			36.7	1	LFS
2	Jericho	Compactor (Night shift)	11/21	19:10-24:05 (4:55)	Nasser Alrjoob(D)	Container	Compactor(UNDP)	47.2	2	Jericho
			12/3	19:03-24:30 (5:27)	Khalid Husein(W) Ali Barahmeh(W)			51.9	2	LFS
3	Jericho	Container 4m3	11/26	6:25-10:36 (4:11)	Ahmad Aldehimi(D)	Container	Container Carrier	85.3	8	Jericho
			12/6	6:12-11:05 (4:53)				98.4		LFS
4	Jericho	Grub crane truck (Transfer with crane)	11/29	5:54-10:02 (4:08)	Ahmed Suliman(D)	Container	Crane truck (EU)	51.8	2	Jericho
			12/8	6:03-10:24 (4:21)				47.2	2	LFS
5	Jericho	Container 8m3	11/30	5:30-10:01 (4:31)		Container	Container carrier	115.3	8	Jericho
			12/7	6:10-9:47 (3:37)				86.8	9	LFS
7	Fasael	Container	11/23	7:00-10:21 (3:21)	Naser Irmeleiah(D) Mahamad Irmeleiah (W)	Container, Bins & bags	Compactor	64.4	1	Auja LFS
			11/24	6:30-12:30 (6:00)				60.0	1	Auja LFS
9	Edyuk & Al-New'meh	Container	11/25	6:48-12:25 (5:37)		Bins & bags		44.2	1	Jericho
			12/1	6:34 (JCN) - 11:49 (Hamura) (5:15)				52.0	2	Tamon TS
10	Ein Sibli, Nawaji, Beit Hassann, Al-Nassaryah, Al-Aqrabanyah	Container	12/1	6:34 (JCN) - 11:49 (Hamura) (5:15)	Mohsen Abd Ellatef(D) Zayed Atewee(W)	Bins & bags	Compactor	52.0	2	Tamon TS
			12/2	5:51 (JCN) - 10:12 (Hamura) (4:21)				26.4	1	Tamon TS
13	Bardarah, Kardarah, Ein-Al-Bidah	Container	12/3	6:01 (JCN) - 8:59 (Check point) (2:58)		Standard Barrels		28.1	1	Tamon TS

4.3 Action Plan C: Improvement of Disposal System

4.3.1 Designation of the Disposal Site

(1) Disposal Site to be Used in 2007

In the basic plan of the JCspd, the following four disposal sites were planned to be used until a new disposal site would be established. To use Tovlan landfill site, meetings were held between JCspd and Tovlan management. Tovlan management sent a price offer to receive waste of JCspd JJRRV. The JCspd used three disposal sites excluding Tovlan site.

Table 4.3-1 Disposal Site to be used by JCspd in 2007

Disposal site	Collection area
1. Jericho dumping site	: Jericho, New'meh & Edyuk
2. Ojah dumping site	: Al-Ojah and Fasael
3. Tovlan landfill site	: East side of Middle JRRV (5 village)
4. Tubas dumping site (to be transfer station)	: West side of Middle JRRV (5 village) and North JRRV (3 village)

(2) Disposal site in 2009 and 2010

JCspd is using Jericho and Ojah disposal site and the Tubas transfer station from which waste is transported to Jenin landfill site. Collected waste in the middle east area was transported to Tubas transfer station because JCspd JJRRV did not use Tovlan landfill site which was managed by Israel Company.

Three compactor vehicles (12 m³) were provided through UNDP in September 2009 and used in Jericho municipality. One of it was planned to be used in Al-Ojah and Fasael. Using this vehicle, JCspd was planning to transport wastes collected in Al-Ojah and Fasael to Jericho disposal site and to close Ojah dumping site.

Table 4.3-2 Disposal site to be used in 2010

Disposal site	Collection area
1. Jericho dumping site	: Jericho, New'meh & Edyuk, Al-Ojah and Fasael
2. Ojah dumping site	: To be closed
3. Tovlan dumping site	: Not use
4. Tubas dumping site (to be transfer station)	: West and East of Middle JRRV (10 village) and North JRRV (3 village)

(3) Solid Waste Disposal in Future

As the Jericho dumping site has the limited capacity, a new landfill site should be secured to continue the proper SWM for long term. The solid waste disposal in future is the main issues for sustainable JCspd JJRRV as presented in #11 JCC held on March 1, 2009. It is indispensable to start for concrete step to realize one of realistic alternatives. JCspd JJRRV and MoLG have to make the decision as soon as possible. Obviously Time is main Issue on this matter.

The three major landfill sites in the West Bank, Jenin, Ramallah and South (Hebron and Bethlehem), would be constructed in near future. The final disposal in JJRRV should be examined based on this condition. The alternatives of future disposal in JJRRV could be three as shown in Table 4.3-3. The alternative 2 or alternative 3 should be selected and decided because the alternative 1 would take time.

Table 4.3-3 Alternatives of Future Disposal in South JJRRV

Items	1. Large/Medium disposal site	2. Small disposal site	3. Transfer station
1. Site	To be secured in C area (need long time to secure the site)	To be secured in A area to meet the schedule	Jericho landfill site
2. Waste to be treated	Jerusalem and Jericho	Jericho and south JRRV	Jericho and south JRRV
3. Major authority	Jerusalem JCspd and JCspd JJRRV	JCspd JJRRV	JCspd JJRRV
4. Construction cost	Large to be secured	Middle to be secured	Small to be secured
5. Operation cost	Large	Middle	Middle. Cost for transportation & tipping charge shall be paid.
6. Efficiency	More efficient	Not efficient	Fair for small amount of waste
7. Environmental issue	Proper operation is indispensable. Financial support for operation is crucial.	Proper operation is necessary. JJRRV should responsible for operation.	Long transportation distance of waste
8. Special note	Need long time	-	-

Source: JCspd JJRRV and JICA Expert Team

JET had recommended to secure a land in "Area A" to avoid delay and uncertainty of decision making. JET and Counterpart had tried to search such land in "Area A". However, it was failed to get support for this idea because vacant land in Area A would be used for development and no land to use disposal site.

On this condition, a transfer station in the existing landfill site would be realistic alternative and waste would be transported to Jenin or Ramallah landfill site although transportation cost and disposal cost would be high.

In parallel with this plan, JCspd should seek a possible location for new landfill site. When an appropriate location would be found, JCspd would consider the construction of a new landfill site.

4.3.2 Improvement of Existing Dumping Site and its Operation

(1) Pilot Project for Sanitary Landfill in Jericho Dumping Site

1) Outline of the Pilot Project

The existing dump site of Jericho city should be improved into the sanitary landfill site; so that a pilot project was conducted to construct the necessary facilities for the sanitary landfill in the existing Jericho dump site.

The type of the sanitary landfill to be adopted was a semi-aerobic landfill. In the semi-aerobic landfill, the leachate was collected in a leachate collection pond through the properly sized perforated pipes embedded in the graded gravel. And the outlet of the main leachate collection pipe was always open to air for natural ventilation. In this system, the fresh air was drawn into the layers thereby introducing an aerobic condition around the pipes. Since the leachate was removed as quickly as it was formed, the internal waste layers had lower water content. The differential temperature in the landfill creates the natural ventilation and the supply of air to the landfill. The semi-aerobic system has advantages on

the leachate improvement, the reduction of methane gas generation and the rapid stabilization of the site. In addition, the technology was cost-effective and simple to construct and operate, and allows a high degree of freedom in the selection of materials for the pipes and the accessories. The semi-aerobic system was schematically presented in Figure 5.1.

The improvement plan was shown in “Drawings of Improvement of Jericho Dumping Site”. The existing dump site of Jericho city was changed from the open dumping to the sanitary landfill. The conditions before and after the pilot project were shown in the Photo 5.1 and 5.2.

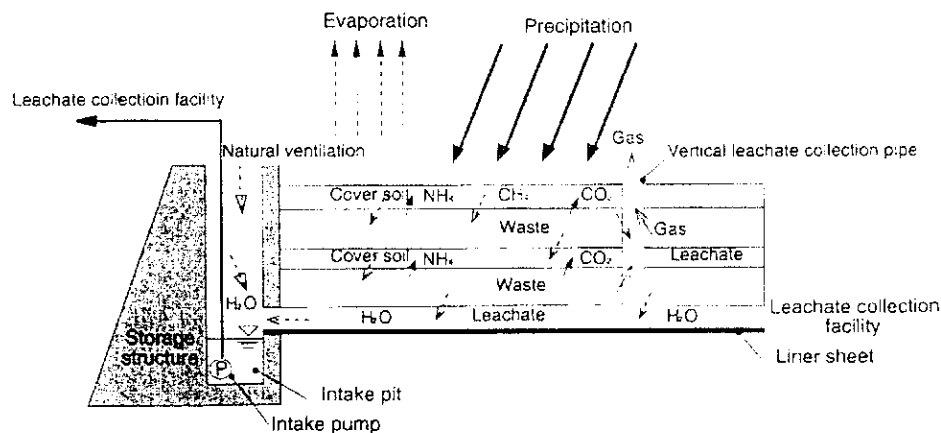


Figure 4.3.1 Schematic Diagram of Semi-aerobic Landfill System

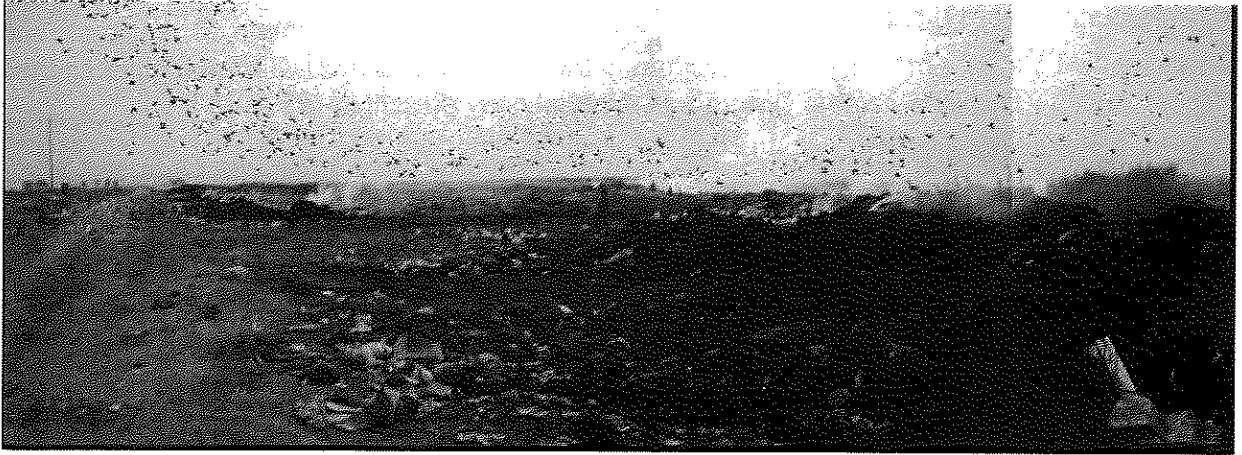
2) Outline of the Pilot Project

The pilot project for sanitary landfill was planned to conduct in small scale and used for training and technology transfer of operation of such sanitary landfill site. It was expected use half year for such purpose.

Table 4.3-4 Outline of the Pilot Project

Items	Existing
Landfill type	Sanitary landfill
Disposal Area	2,500 m ²
Disposal Capacity	7,000 m ³
Duration of Disposal	0.5 year

Source: JICA Expert Team



January 17, 2007: Before the construction (Open dumping of waste with odor, smokes and flies)



January 22 and 23, 2007: After removal of the existing waste to the wadi side



January 24, 2007: Start of excavation works

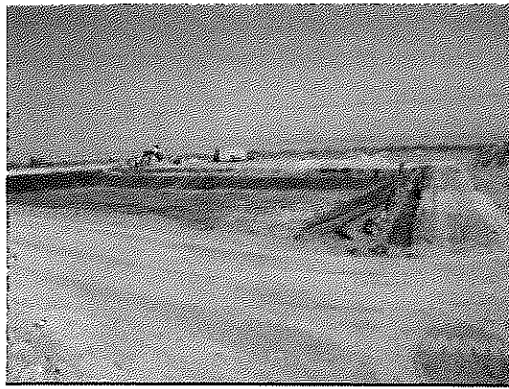


February 6, 2007: Completion of excavation

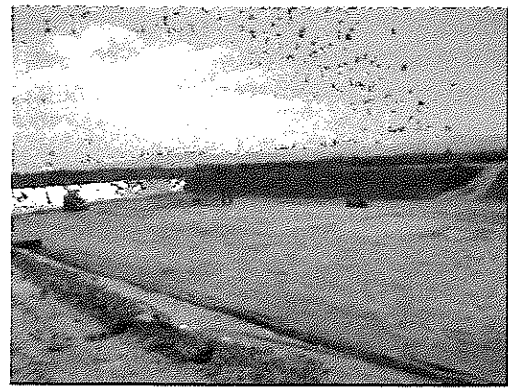
Figure 4.3.2 Construction of Landfill (1)

(2) Operation of landfill site

The improvement work of the landfill operation has started on January 31, 2007 using the Caterpillar tractor shovel. After the completion of daily waste landfill, the daily soil cover was placed. The placement of daily soil cover reduced the possibility of fire, bad odor, scattering of waste and spread of insects etc. The sanitary landfill operation was schematically presented in Figure 5.2.



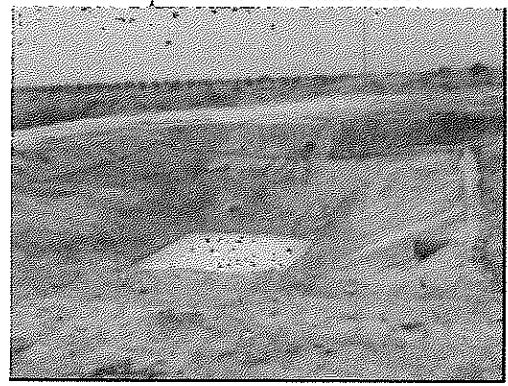
Installation of geo-membrane liner



Completion of the liner sheet



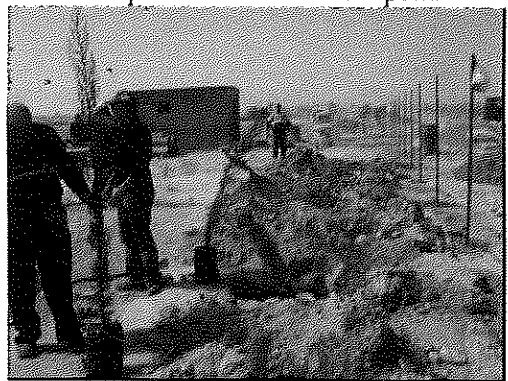
Leachate collection pipe



Completion of the leachate pond



Start of construction of control room



Planting trees

Figure 4.3.3 Construction of Landfill (2)

End of each day operation, place Min. 0.2m Dairy covering soil on top and spread & compact

After waste scavenging activity have finished, spread & compact about 30 to 50cm height layers

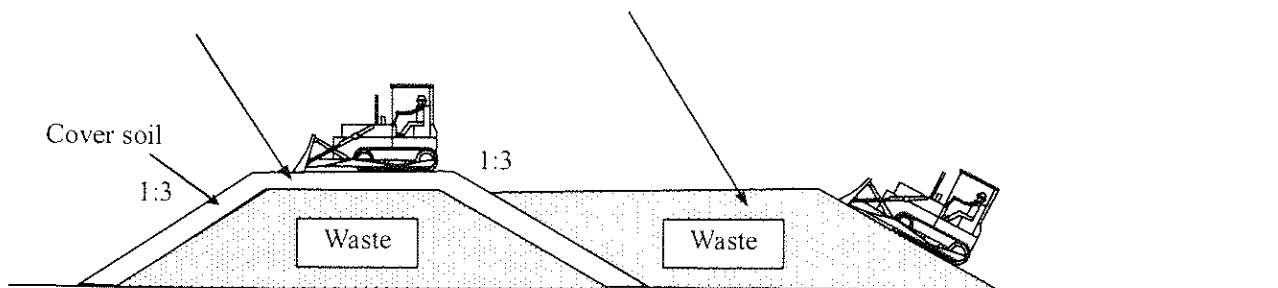
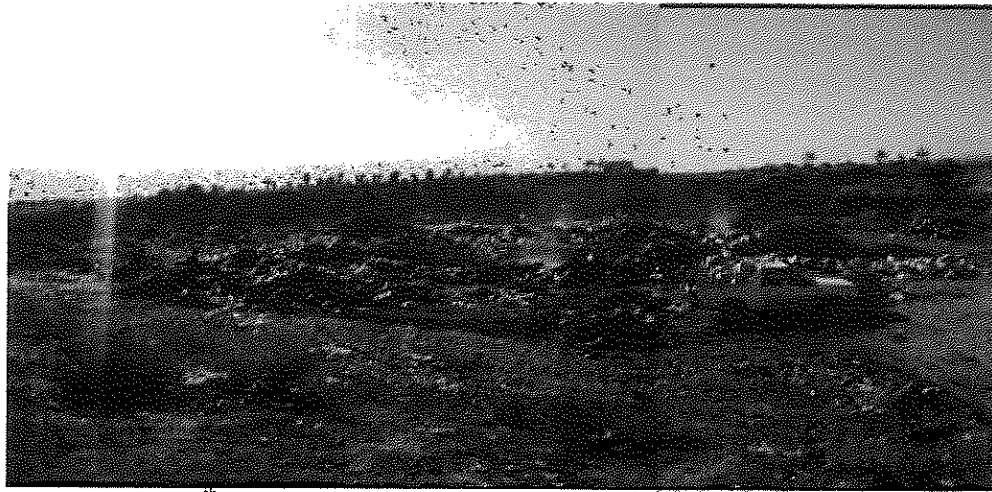


Figure 4.3.4 Schematic Diagram of Sanitary Landfill

Daily control and instruction were provided by Mr. Roma, head of the technical operation section of the JCspd, as shown in Photo 5.3.



26th of January: dumping waste before improvement work



Spreading of waste and compaction



Technical guidance for covering soil



Mr. Roma, Head of technical section, instructs and supervises landfill works.



Mr. Roma instructs dumping place.

Figure 4.3.5 Improvement of Landfill Operation

(3) Extension of Jericho Disposal Site

1) Objective of Extension

A part of Jericho disposal site was improved as a pilot project aiming at: 1) improving existing open dumping site into sanitary landfill site and 2) providing the technical instruction of the proper maintenance and control of sanitary landfill. However, the reclamation life of the sanitary landfill site was only half year, which is judged too short for the JCspd workers to

learn sufficiently the technique regarding the maintenance and control of sanitary landfill. Also, JCspd should have proper landfill site to establish sound solid waste management system.

Therefore, sanitary landfill site constructed in the pilot project was expanded to whole area of Jericho landfill site. Extension of Jericho landfill site make possible to receive waste another 3.5 years and to secure the longer technical-learning period. The extension project was decided in September 2007 and started the construction in October, 2007. It was completed in January 2008.

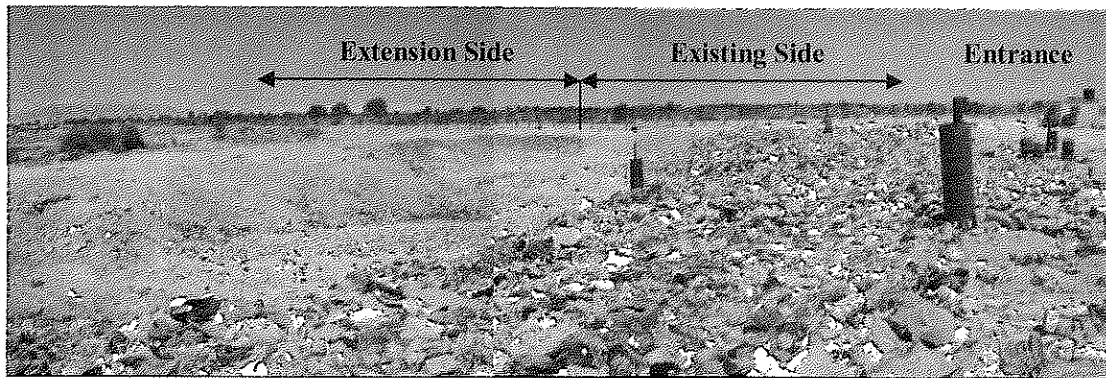


Figure 4.3.6 Extension of Jericho Landfill site

2) Outline of Extension

After extension, the disposal area increased from 2,500 m² to 10,300 m²; disposal capacity from 7,000 m³ to 53,000m³, and duration of disposal from 0.5 year to 4.0 years as shown in Table 4.3-5.

Table 4.3-5 Outline of Extension

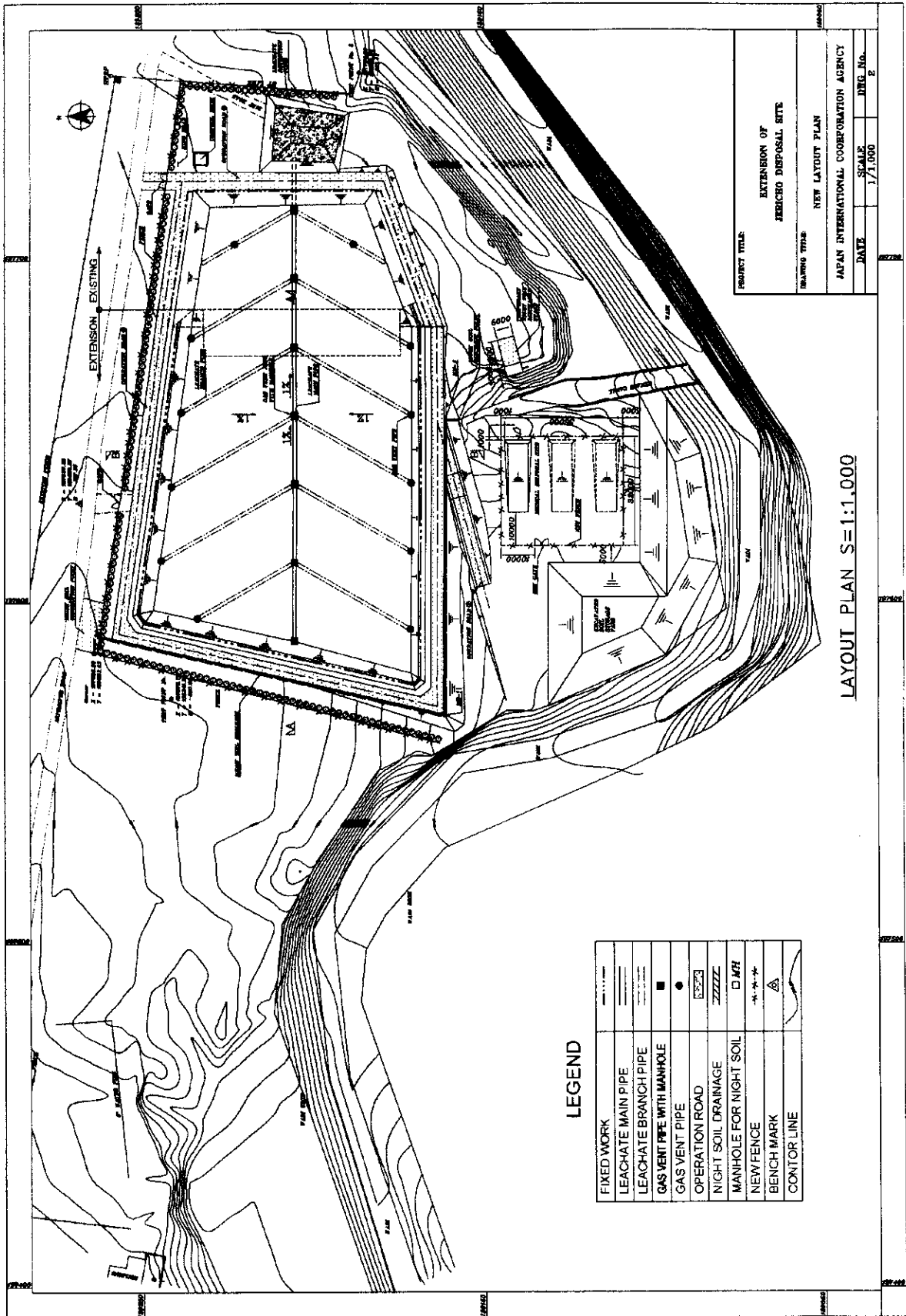
Items	Existing	Extension	Total
Disposal Area	2,500 m ²	7,800 m ²	10,300 m ²
Disposal Capacity	7,000 m ³	46,000 m ³	53,000 m ³
Duration of Disposal	0.5 year	3.5 years	4.0 years

Source: JICA Expert Team

(4) Improvement of Landfill Operation

1) Landfill Method

The improvement work of the landfill operation continued using extended area of Jericho landfill site.



2) Supervision of Operation

To improve the landfill operation, Operation and Maintenance Manual of landfill site was prepared in July 2007¹. The landfill operation staff would understand how to maintain and control the landfill site properly. The head of the Technical Operation Section and site manager started to supervise the operator and guards in line with the Operation and Maintenance Manual. For reference, contents of supervision made by the head of the Technical Operation Section were presented in Table 4.3-6.

Table 4.3-6 Contents of Supervision of Operation and Maintenance

Date (year 2007)		Contents of Supervision
June	30 th	Cleaning of the Site : surrounding of fence & gate
July	1 st	Cleaning of the Site: operation road and leachate pond
	2 nd	The way of installation of the protective soil for liner sheet of the slope The way of installation of height indication to protect the leachate pipe
	3 rd	Landfill of the waste by the "push down" method
	4 th	The way of installation of daily soil cover
	5 th	The way of installation of landfill boundary
	7 th	Landfill of the waste by "push up" method
	8 th	The way of construction of dumping stage
	9 th	The way of control of the height of the landfill area
	10 th	The way of construction of dumping stage
	11 th	Landfill of the waste by the "push up" method
	12 th	Preparation of the repair of the gas vent pipe
	14 th	The way of repair and extension of gas vent pipe
	15 th	The way of protection of gas vent pipe
	16 th	The way of installation of the final soil cover
17 th	Landfill of the waste by the "push down" method	
18 th	The way of digging of the landfill of the medical waste	
19 th	The way of installation of daily soil cover	
21 st	The way of control of the height of the landfill area	

3) Monitoring of Existing Landfill Operation

The situation of existing landfill operation was monitored throughout December 2007 by the JICA Expert Team. Present situation of each item were evaluated by marking ○ (good), △ (more improvement is needed) and × (improvement is severely required) as shown in Table 4.3-7. The table clearly indicated that so many items were marked △ and ×. As a result, the second-time guidance was carried out by the JICA Expert Team in January 2008 according to the contents of Table 4.3-7.

Table 4.3-7 Monitoring Results of Landfill Operation

Item	Evaluation of Present Situation (As of December 2007)		Contents of Second-time Guidance by JICA Expert Team in January 2008
1. Landfill Operation			
(1) Waste filling	△	Compaction was carried out, but control of landfill slop was not carried out.	The method to control landfill slope
(2) Daily soil cover	×	NOT carried out.	To cover with municipality's heavy machinery until UNDP provide the heavy machinery for covering soil.
(3) Waste	○	Guard men indicated drivers of	-

¹ Updated in July 2008 adding operation of backhoe loader donated by UNDP/Japanese Government

Item	Evaluation of Present Situation (As of December 2007)		Contents of Second-time Guidance by JICA Expert Team in January 2008
unloading		waste collection vehicles about the point of unloading.	
(4) Site cleaning	×	NOT carried out.	To clean everyday
2. Maintenance and control of the landfill facilities			
(1) Liner sheet	×	Liner sheet was damaged by the direct touch with the heavy machinery for landfill.	To set protection soil to prevent liner sheet from the direct touch with the heavy machinery for landfill.
(2) Gas vent pipe	△	It was not seen to damage by the direct touch with the heavy machinery for landfill. Extension of gas vent pipe was not carried out. The fire happened twice during the extension of gas vent pipe.	To extend gas vent pipe periodically. To pay attention to strict prohibition of use of fire in landfill site basically. To cover soil around in case of use of fire.
(3) Leachate pipe	×	The equipment was missing which was set to show the height that the heavy machinery for landfill could pass above leachate pipe in order to avoid the damage of leachate pipe.	To make the same equipment with JCspd budget.
(4) Leachate pond	○	Maintenance was carried out periodically.	-
(5) Control Room	○	Ditto.	-
(6) Gate and Fence	△	The prop of gate was broken. Fence was maintained periodically.	To set tires and other materials around the prop to prevent it from the direct touch with cars after repair of the prop.
(7) Operation road	○	Maintenance was carried out periodically.	To convey the gravel from Wadi and cover a road with it in case of the rainy season.
3. Management of operation and maintenance record			
(1) Landfill plan	×	NOT planned.	The method how to fill the extension part
(2) Control of the height of the landfill area	×	NOT carried out.	The method how to control the height of landfill site.
(3) Making maintenance record	×	NOT carried out.	The method how to make a record.
4. Environment Management			
(1) Groundwater pollution prevention	×	Same as 2 (1).	Same as above 2 (1).
(2) Scattering of waste prevention	×	Daily and Final soil cover was not carried out.	To cover with soil daily.
(3) Offensive odor prevention			
(4) Fire prevention			
(5) Vectors prevention			
5. Safety Control			
(1) Meeting before the work	×	NOT carried out.	To have a daily meeting for 10 minutes before working in order to check the content of work.
(2) Response to the accidents	×	Anyone did not inform the director of fire and other accidents immediately.	To inform the director of fire or other accidents immediately and to make a report about it.
(3) Handing out	○	Safety gear, such as a first-aid kit	-

Item	Evaluation of Present Situation (As of December 2007)	Contents of Second-time Guidance by JICA Expert Team in January 2008
safety gear	and safety shoes, were handed out.	

Note: ○ good, △ more improvement is needed, × improvement is severely required

Source: JICA Expert Team

4) Preparation of Operation and Maintenance Manual

Operation and Maintenance Manual was prepared in July 2007² for the landfill operation staff to understand how to maintain and control the landfill site properly. The manual was written originally in English and translated into Arabic afterwards.

The manual aimed to unify the processes of landfill operation and procedures for reporting, smooth takeover of the work, prevention from downgrading the work at the time of takeover and keeping the efficient and high-quality maintenance and control by up-dating the manual on occasion.

The main contents of the Operation and Maintenance Manual were shown in Table 4.3-8.

Table 4.3-8 Contents of Operation and Maintenance Manual

- | |
|--|
| <ol style="list-style-type: none"> 1. Landfill operation 2. Maintenance and control of the landfill facilities 3. Environment Management 4 Management of operation and maintenance record 5. Safety Control |
|--|

5) Visualization of Operation and Maintenance Manual with DVD

Operation and maintenance manual for landfill operation was visualized with DVD in July 2008. The DVD was used especially for training of operator and dissemination to other JCspd. The special board for visitors that explains about the Jericho landfill site was constructed at the entrance of the landfill site as well.

Table 4.3-9 Contents of Visual Manual for Operation and Maintenance

- | |
|---|
| <ol style="list-style-type: none"> 1. Outline of Jericho Landfill Site 2. Explanation of Semi-Aerobic 3. Explanation of Operation: <ol style="list-style-type: none"> 1) Daily operation, 2) Control of height and gradient of the landfill, 3) Protection of leachate collection pipe, 4) Protection of gas collection pipe, 5) Protection of liner sheet, 6) Extension of gas collection pipe, 7) Control of covering soil, 8) Final soil covering, 9) Cooperation with waste pickers, 10) Reporting system for emergency and 11) Safe and sanitation management |
|---|

² Updated in July 2008 adding operation of backhoe loader donated by UNDP/Japanese Government

(4) Improvement of Al-Ojah Landfill Site

A fence should be provided and an access road should be improved when the budget was available. However, a fence was not provided and an access road was not improved. The operation was improved by periodical preparation of dumping area and covering soil. Al-Ojah landfill site would be closed shortly.

4.3.3 Monitoring of Illegal Dumping

The following dumping places should be checked periodically:

- (a) Marj Najah
- (b) Al Malake Bridge
- (c) Upper Fasaal

Above dumping sites were not used after JCspd started the solid waste collection service. JCspd conducted regular monitoring for illegal dumping.

4.4 Action Plan D: Improvement of Maintenance System

4.4.1 Establishment of Maintenance System for JCspd

(1) Repair of Compactors of Bardalah and Jiftlik

In March 2006, vehicle parts needed to repair two ISUZU compactor vehicles (capacity 5 m³) owned by Bardalah and Jiftlik were procured. After these parts and spare parts were received, these two vehicles were repaired at Jericho workshop.

As the vehicle licenses of both the Bardalah and Jiftlik vehicles were expired, the JCspd applied to obtain new licenses for these cars including car insurance.

(2) Introduction of Maintenance Contract with Jericho Workshop

The JCspd had no facility for maintenance and repair of vehicles and heavy equipment; so that the JCspd contracted out maintenance works to Jericho Municipality.

Agreement on the maintenance of vehicles and equipment was concluded between the JCspd and Jericho Municipality in April 2007. According to the agreement, the roles of each party were demarcated as presented in Table 4.4-1. Based on the agreement, recording system on maintenance started since January 2007.

Table 4.4-1 Demarcation of Roles for Vehicles & Equipment Maintenance

Item	Contents		Demarcation of Roles		
			JCspd	Jericho workshop	Private workshop
Equipment control	Preparation of maintenance policy		○		
	Preparation of equipment list		○		
	Record and control of operation hour	Recoding of daily and monthly running distance	○		
	Preparation of maintenance record	Preparation of maintenance record and record keeping		○	
	Control of spare parts	Storehouse and spare parts control		○	
	Control of garage	Parking record		○	
Inspection and maintenance	Inspection and maintenance of collection vehicle	Daily inspection	○		
		Monthly inspection		○	
		Seasonal inspection		○	
		Annual inspection		○	
	Inspection and maintenance of heavy equipment	Daily inspection	○		
		Weekly inspection		○	
		Monthly inspection		○	
Repair	Normal repair	Repair of puncture		○	
		Change o lump		○	
	Special repair	Repair of accident car			○
Administration	Cost management	Maintenance cost	○		
	Personnel management	Driver and collection worker	○		
		Maintenance staff		○	

Source: JCspd

(3) Recording System of Repair & Maintenance by Jericho Workshop

The maintenance recording system started in January 2007. The procedures of the system were summarized as follows.

- (1) The JCspd requested the maintenance in written order to the Jericho workshop.
- (2) After completion of the maintenance requested by the JCspd, the workshop sent the maintenance report to the JCspd about the number of repaired vehicles and containers including the total expenses.
- (3) Thus, the maintenance of vehicles, equipment and containers were recorded and archived by the technical operation section of the JCspd.
- (4) The head of the technical operation section of the JCspd monitored and confirmed whether the system ran well or not.

(4) Daily Maintenance by JCspd Operator

A check list was prepared. And the daily check was conducted by the drivers of collection vehicles and staff of the Technical section.

(5) Maintenance and Fuel Cost of in 2008 (January to December 2008)

Table 4.4-2 showed the repair and maintenance cost that the JCspd paid to Jericho Municipality and spare parts cost. Total maintenance cost amounted to 241,903 NIS that was 18.4 % of total running cost of JCspd which was 1,316,724 NIS in 2008. Spare parts cost that was provided by JICA was 26,435 NIS and included in above.

Fuel cost of equipment was also shown in Table 4.4-2 and amounted to 302,403 NIS that was 23.0 % of total running cost of the JCspd.

Table 4.4-2 Repair and Maintenance and Fuel Cost of JCspd in 2008

Area and Type	Equipment	Cost (NIS)			Ratio (%)		
		Maintenance	Fuel	Total	Maintenance	Fuel	Total
Vehicle							
1.1 Jericho	Compactor Nissan 77	15,534	21,687	37,221	2.9	3.0	6.8
	Compactor Nissan 79	15,163	26,139	41,302	2.8	4.8	7.6
	Container Nissan 72	27,322	41,911	69,233	5.0	7.7	12.7
	Container Mercedes	47,547	19,617	67,164	8.7	3.6	12.3
	Container Volvo	26,504	56,762	83,266	4.9	10.4	15.3
	Container Nissan 70	34,360	47,249	81,609	6.3	8.7	15.0
	Patrol car	0	8,905	8,905	0.0	1.6	1.6
	Sub total	166,430	222,270	388,700	30.6	40.8	71.4
1.2 South Middle & north	Compactor	12,699	40,061	52,760	2.3	7.4	9.7
	Compactor Jiftlik	5,579	0	5,579	1.0	0	1.0
	Compactor Bardara	18,756	36,968	56,349	3.6	6.8	10.4
	Sub-total	37,659	77,029	114,688	6.9	14.2	21.1
Vehicle Total		204,089	299,200	503,308	37.5	55.0	92.5
Heavy Equipment	Tractor loader *	(141,885)	(703)	(142,588)	(26.1)	(0.1)	(26.2)
	Backhoe (UNDP)	110	1,355	1,465	0.0	0.2	0.3
	Dump truck (Jericho)	0	1,749	1,749	0.0	0.3	0.3
	Sub total	110	3,104	3,214	0.0	0.6	0.6
Car wash & greasing		18,000	0	18,000	3.3	0	3.3
Container Maintenance		19,704	0	19,704	3.6	0	3.6
Grand Total		241,903	302,43	544,306	44.4	55.6	100.0
Average Monthly cost in 2008		20,159	25,200	45,359	(128.7%)	(133.8%)	(131.5%)
Average Monthly cost in 2007		15,662	18,838	34,500	(100%)	(100%)	(100%)

Note: Tractor loader* is rented from Jericho Municipality including maintenance and fuel cost.

Ratio (%) = Cost / (Grand Total Cost)

Comparing the cost in 2007, average monthly cost for maintenance was 29 % higher and average fuel cost was 34 % higher than one in 2007 respectively. As the result, average total

cost of maintenance and fuel was 31.5% higher than one in 2007. It was expected that maintenance cost would be reduced when new equipment would be used.

(4) Rental cost

The JCspd was renting a tractor loader which was an equipment provided by Japanese Grant aid in 1999 to use at disposal. Tractor loader was used at Jericho landfill site. Renting price was agreed to 150 NIS/operation per hour including operator, fuel and maintenance cost. The tractor loader is operating two hours/day in principle.

Rental cost of tractor loader in 2008 was 141,885 NIS that was 10.8% of total running cost in 2008. Average working hour became 3.1 hour/day. It was 1.26 times of the rental cost in 2007. The JCspd had new bulldozer through EU project that contributed to reduce the rental cost of equipment.

4.4.2 Strengthening of Maintenance Capacity of Jericho Workshop

(1) Procurement of Tool & Equipment for Jericho Workshop

The following equipment shown in Table 4.4-3 was purchased in March 2006 to strengthen the maintenance capacity of Jericho workshop.

Table 4.4-3 Maintenance Equipment Prepared for Jericho Workshop

Equipment	Quantity	Type and Specifications
1) Wheel fixing machine	1	Tire diameter: From 10"-18
2) Nozzle tester	1	Max. pressure: 50Mpa (500Kg/Cm ²)
3) Coil spring compressor	1	Case dimensions: 190x180x70
4) Air impact wrench	1	Screw diameter: 1/2" and 3/4"
5) Charging machine	1	Battery voltage: 12V and 24V
6) Brake oil charging pump	1	Flow rate: Approx. 0.3 liter/min
7) Hydraulic oil hose maintenance device set	1	Cutting and Connector fixing: 1"
8) High pressure washing machine	1	Capacity: 30 liter/min x 200bar
9) Turning machine	1	Capacity: 360mm x 750mm

Source: JCspd and JICA Study Team

(2) Procurement of Spare-parts of Existing Collection Vehicles

Provision of spare-parts was one of major problems for proper maintenance. To make proper maintenance, necessary spare-parts for existing collection vehicles (Volvo, Mercedes, and Spanish-Nissan vehicles) were procured in March 2006 together with spare-parts of Isuzu vehicles. These spare-parts were used for repair and maintenance of these vehicles afterward and contributed for smooth repair and maintenance.

4.5 Action Plan E: Strengthening Organization and Institution

4.5.1 Set-up JCspd Organization Structure

The organization structure was decided finally at the end of 2006 through frequent discussions among administrative members and staff of the JCspd and JICA Expert Team.

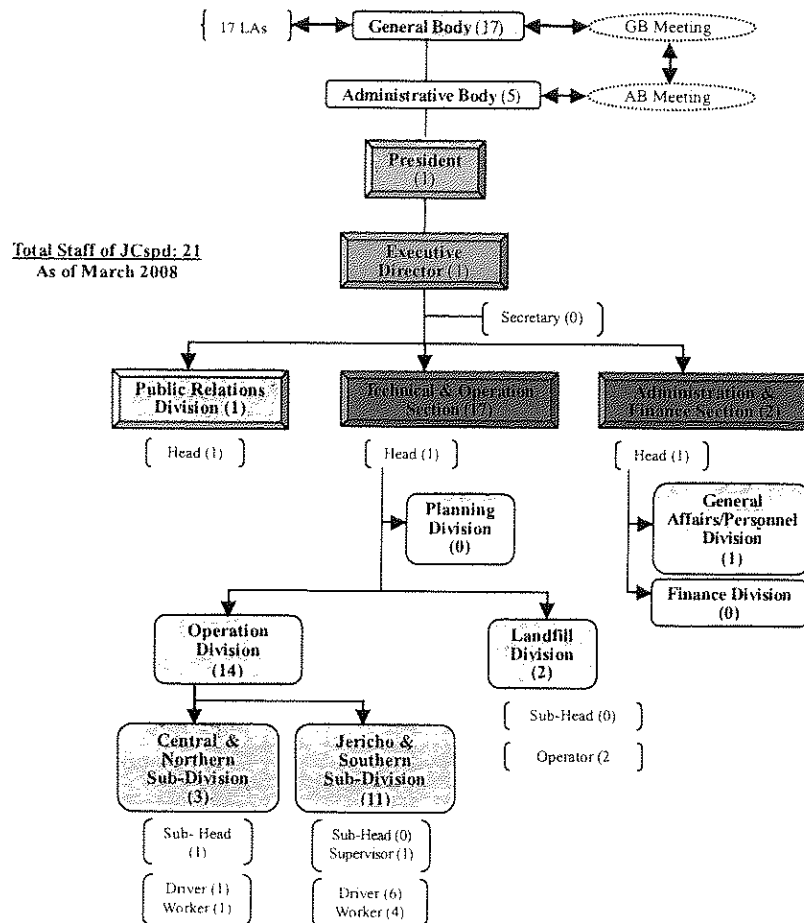


Figure 4.5.1 Organizational Structure of JCspd

(1) Deployment of Staff and Workers

The number of staff and workers were originally planned on 24. However, the JCspd started the operation with 19 to minimize the cost. As of March 2008, 21 staff and workers are engaging in the operation as shown in Figure 4.5-1. Among all, 15 staff and workers are seconded from Jericho municipality. In December 2008, 23 staff and workers are engaging. Three new workers were joined in November 2009 and one heavy equipment operator was joined in January 2010, then total 27 staff and workers are engaging.

(2) Preparation of Job Descriptions

The JCspd established organizational functions and job descriptions (see Annex 6) that were mentioned in "JCspd Workers' Handbook" published by the JCspd. The handbook was distributed to all staff and workers of the JCspd.

(3) Training of Staff and Workers

1) Training in Jericho

A number of training was carried out before and after the start-up of JCspd operation.

Table 4.5-1 Training Course during October 2006 and March 2008

Date		Training Contents	Trainee
1	21 st of October 2006	1) Introduction of the JCspd service by the executive director of the JCspd 2) SWM in Tokyo by the JICA Expert Team	20 of solid waste workers of Jericho municipality
2	23 rd of December 2006	1) Opening address by the president of the JCspd 2) JCspd service by the executive director of the JCspd 3) Job description by the executive director of the JCspd 4) Treatment about the JCspd employees by he executive director of the JCspd	16 of solid waste workers of the JCspd attended.
4	24 th of May 2007	Explanation about the delivery of summer uniform and instruction how to use	10 staff and workers
5	23 rd of June 2007	Workshop was opened at Jericho training Center by the President of the JCspd, discussed and decided the establishment of "Safety and Sanitation Committee".	All staff and workers
6	28 th of July 2007	A safe handling of medical waste was demonstrated by using the handbook by using the handbook prepared by the JICA Expert Team (photo is presented in Chapter 3.4)	10 staff and workers
7	12-14 th of February 2008	Basics of Human Resources Management	Manar Al-Fitiani (Financial section)
8	12-14 th of February 2008	Work Planning & Organization and Time Management	Waleed Al-Moghrabi (Supervisor of technical operation section)

Source: JCspd

The JCspd policy was to build up its staff capacity. According to this, the JCspd facilitate the participation of some of its staff in training courses as shown in Table 4.5-2

Table 4.5-2 Staff Training of JCspd in 2008

Name and Position	Contents of Training	Place
1. Mrs Manal Romanin (head of financial and administrative section)	training course "Purchasing management and evaluation of assets"	the MoLG training center.
2. Miss Manar Al-Fityani (financial and administrative section)	training course "Principles of human resources development"	the MoLG training center.
3. Mr. Sultan Roma, head of technical section,	training course "Budget preparation"	the MoLG training center.
4. Mr. Waleed Al-Moghrabi, head of SWM division,	training course "Time planning and management"	MoLG training center.
5. Mr. Waleed Al-Moghrabi, head of SWM division	training course "Vocational safety and principles of first aid"	the water training center.
6. Mr. Naser Rajoob, Driver,	training course "Vocational safety and principles of first aid"	the water training center.
7. Mr. Omar Al-Saradeeh, Guard,	training course "Vocational safety and principles of first aid"	the water training center.

2) Training (Study Tour) in Jordan

Training (Study Tour) in Jordan was planned to develop JCspd institutional and organizational capacity and management skills through learning about SWM in Jordan. It was organized with the cooperation of the Ministry of Environment of the Jordanian Government and

Amman Municipality.

The Study Tour started on September 16 and ended on September 22, and the program was arranged as shown in Table 4.5-3.

Table 4.5-3 Program of Training (Study Tour) in Jordan

Date	Program	Remarks
Sept.16 (Sat)	Travel (Jericho-Amman)	
Sept.17 (Sun)	Orientation Courtesy call to JICA Jordan Office Lecture on Solid Waste Management System in Jordan Meeting of Trainees	Ministry of Environment
Sept.18 (Mon)	Technical visit to landfill site of Amman Municipality and Biogas Plant at old landfill site	Amman Municipality
Sept.19 (Tue)	Technical visit to landfill operation by Local Government in Alla area Meeting of Trainees	Alla Joint Council for Landfill
Sept.20 (Wed)	Lecture on hazardous waste management in Jordan Technical visit to hazardous waste disposal site	Ministry of Environment
Sept.21 (Thu)	Lecture on and technical visit to recycling factory in Amman Lecture on recycling of plastic in Jordan Discussion on Outcomes of Training	Senior Expert of JICA Jordan Office
Sept.22 (Fri)	Travel (Amman- Jericho)	

Source: JICA Expert Team

3) Training Course in Japan

Training course for SWM was carried out 3 times in Japan: September 2005, November 2006 and October 2007. In total, 22 Palestinians from Central Government and LA participated in it. 4 staff out of 22 participated from JCspd JJRRV.

4) Training on Medical Waste Management

“Medical Waste Handling Handbook” for a safe handling of medical wastes was prepared to reduce the risk of infections among waste collection worker and landfill site workers who eventually handle hazardous medical wastes. Using this handbook, training for the JCspd workers for a safe handling of medical waste was demonstrated in July 2007 by the JICA Expert Team.

(4) **Safety and Sanitation Committee**

The safety and sanitation committee was established through discussion at the workshop held on June 23, 2007 at Jericho Training Center. The objectives of “Safety and Sanitation Committee” were to prevent from work accidents and to create a sanitary and healthy work. The committee consisted of 5 members: the executive director of the JCspd, head and supervisor of technical operation section and two representatives from the workers side.

The committee meeting was held five (5) times until October 2009 as shown in Table 4.5.4.

Table 4.5.4 Safety and Sanitation Committee

Committee/ Meeting	Date	Remark
#1 Safety and Sanitation Committee	August 2007	Accidents reported during last 2 month
#2 Safety and Sanitation Committee	February 2008	Use of safety goods
#3 Safety and Sanitation Committee	July 3 2008	The fire accident occurred on June 13 th
#4 Safety and Sanitation Committee	October 25, 2008	Medical inspection
#5 Safety and Sanitation Committee	Sept. 28, 2009	Fire accidents at landfill site in May

4.5.2 JCspd Ordinance and Rules on SWM

(1) Preparation of JCspd Ordinance and Rules on SWM

In order to provide SWM service of JCspd from January 2007, the Palestinian counterparts and the JICA Expert Team discussed and formulated the “Basic Plan of SWM Services of the JCspd” (hereinafter referred to as “the Basic Plan”). The Basic Plan was the basic concept of the SWM service and operation of JCspd for Start-up the service. The Basic Plan also includes SWM Plan of 2007 and was discussed and approved in the AB meeting held on August 3, 2006.

The JCspd ran SWM service based on the Basic Plan and SWM plan of 2008 that was approved in AB meeting held on December, 2007. On the basis of one and half year experiences, the JCspd and JET started preparation of a specified ordinance and rules on SWM services of the JCspd to make clear the consensus. The JCspd and JET had formulated a regulation committee to discuss and prepare draft of “SWM Ordinance and SWM Rules” of the JCspd.

The Regulation Committee was held on May 13, May 17 and November 17, 2008 at the JCspd Office. Table 4.5-5 shows a modification of the “JCspd SWM Ordinance and Rules (First draft)”.

Table 4.5-5 JCspd SWM Ordinance and Rules (First draft)

SWM Ordinance (draft)		Rules and remark
Chapter 1	Objectives and limitation	-
1.1 Objectives	(1) Protect public health, prevent public nuisances and contamination of air, soil surface water, groundwater and other environment through control and proper treatment of solid Waste	-
	(2) Assure that all individuals are both informed and responsible for their actions regarding solid waste	-
	(3) Support activities that will promote 3Rs	-
	(4) Impose penalties and fines concerning illegal disposal activities	-
	(5) Augment, supplement and support existing PNA controls pertaining to solid waste.	-
1.2 Limitations	(1) Applied only in JJRRV	-
	(2) Applied for solid waste generated from houses (domestic waste), and shops & offices (commercial waste) in principle	-
	(3) Tentative measures for other waste to reduce risk on public health and environmental contamination.	(1) Measures on following waste: Agriculture plastic waste, Medical waste, Sewerage, Waste of slaughter house, Non hazardous industrial waste
	(4) Excluding construction waste and hazardous waste (to be studied)	

1.3 Definition	Type of waste (municipal waste, household, industrial, medical, non-hazardous and hazardous waste) LA, council, GB member, AB member, Ministry, Collection, Disposal, Open dumping, Generator of waste, Open burning	(1) Type of waste to be treated by JCspd (2) Type of waste to be studied
Chapter 2	Proper treatment and disposal of solid waste	
2.1 Target waste	(1) JCspd shall collect, transport and dispose domestic waste and commercial waste generated in JJRRV in principle	-
	(2) JCspd will take necessary tentative measures for other waste to reduce risk on public health and environmental contamination.	Same as 1.2, (3)
2.2 Service area	(1) SWM service is provided to all 17 LAs in JJRRV according to their needs and their payment of fees.	-
	(2) In principle, no payment by LA result no service in his village.	-
2.3 Proper treatment and disposal	(1) JCspd is responsible to make collection, transportation and proper disposal of domestic and commercial waste.	
	(2) JCspd may take tentative measure for other waste	Tentative measures for specified waste mentioned in 1.2 (3)
	(3) JCspd should prepare necessary equipment and facilities to implement proper treatment	
	(4) JCspd shall continue study to improve his service and treatment and disposal.	
Chapter 3	Annual Plan	
3.1 Annual SWM Plan	(1) Annual SWM plan (collection, transportation and disposal) should be prepared and decided in AB meeting	(1) Contents of Annual SWM plan
3.2 Annual Financial Plan	(1) a. Annual Financial Plan (revenue and expenditure) should be discussed and decided in AB meeting and approved by GB members. b. Annual financial plan should be submitted to MoLG	(2) Contents of financial plan
Chapter 4	Standard method	
4.1 Collection & Transportation	(1) Collection from houses and shops: a. No primary collection by JCspd. Primary collection service will be provided by LA with his expenses. b. Standard service is twice a week	(1) Minimum service will be once a week
	(2) Collection from large amount discharger: a. Service will be provided according to his needs and the cost shall be covered by each discharger	(2) Big amount discharger is the customer who request and/or provide hauled container.
	(3) JCspd will not collect other waste in principle.	
4.2 Disposal	(1) Household & commercial waste shall be disposed at designated sanitary landfill site and/or transfer station.	(1) Designated landfill site - Jericho landfill site - Al-Ojah landfill site (-Tovlan landfill site)
	(2) Tentative measures for disposal of other waste will be taken by JCspd to reduce risk.	(2) Designated transfer station - Tubas transfer station
Chapter 5	Charge and obligation of LA	
5.1 Charge for LA for SWM service	(1) Charge for Jericho municipality is decided based on the cost to cover the SWM service in Jericho including disposal cost at Jericho landfill site.	
	(2) Charge for other LAs are decided based on the charge for family and number of families of LAs	15 NIS/month /single family 25 NIS/month /families lived same house
	(3) LAs should pay their service charge to the JCspd every month.	
	(4) Delay of the payment of LAs is subject for additional	

	charge (interest). Accumulated debt is subject for deduction from the LA subsidy of PNA	
5.2 Charge for large amount discharger	(1) Charge for large amount discharger will be set to cover the cost for service requested by large amount discharge. (2) Payment will be based on the agreement between JCspd and large amount discharger (3) JCspd will study on charge for medium and small scale business establishment.	(1) Large amount discharger (delivered a hauled container)
Chapter 6	Monitoring of SWM service	
6.1 Monitoring	(1) JCspd shall conduct daily monitoring of SWM service and operation of disposal site	
6.2 Public inspection	(1) LA should monitor cleanliness of his area and service of JCspd. (2) Residents should monitor and communicate with their LA to create consensus of their evaluation	
6.3 PR activities	(1) JCspd will conduct community meeting to communicate with resident when it is requested by LA and/or active NGOs. (2) JCspd will conduct PR activities to obtain cooperation and support from residents in JJRRV.	
6.4 Opinion and claim	(1) JCspd is accepting any comments and claim on SWM service provided by JCspd in the Office (Jericho and Beit Hassan) and by Tel/Fax, website and by e-mail.	
Chapter 7	JCspd organization and obligation of staffs	
7.1 Operation of JCspd	(1) AB member is fully responsible to operate the JCspd. The Executive Director nominated by AB members and approved by GB members is implement the decision made by AB members and GB members.	(1) Job description - GB member and GB meeting - AB member and AB meeting - Executive Director
7.2 Structure of JCspd organization	(1) JCspd is composed of following division and section under the Executive Director: a. Secretary b. Technical division c. Planning section c. Public relation division d. Financial and administrative section	(1) Job description of each Division
7.3 Recruit of staff	(1) Recruit of major staff of JCspd shall be discussed and decided in AB meeting whether the staff will be recruited through seconding or public announcement. (2) Public announcement shall be applied to recruit the major staff of JCspd when no proper candidate in member LA.	(1) Major staff will be - Executive Director - Head of division and section (2) Priority will be put on seconding of the staff from member LAs to recruit major and other staff.
7.4 Working day	(1) SWM service is providing 6 days/week (excluding Friday), approximately 310 day/year. (2) Working hour is 8:00 to 14:30 in principle (6.5 hours/day). (3) Collection of waste and disposal of waste start 5:30until 12:00 in summer season. (4) Night shift will be considered for better service	
7.5 Insurance and welfare	(1) Same as staffs of Jericho municipality.	

Source: JCspd

4.6 Action Plan F: Establishment of Accounting System

4.6.1 Objectives of Action Plan F

(1) Main Issues to be Tackled

Main issue to be tackled by Action Plan F was to establish and develop the accounting system that was essential for the JCspd to grasp a proper SWM cost and rational SWM fees.

(2) Expected Output

The following outputs were expected by Action Plan F: 1) introduction of a computerized accounting system, 2) SWM cost and fees, 3) budget preparation and management, and 4) cash control.

(3) Preparation Works before Start-up of JCspd Operation

Firstly, in August 2006, the JICA Expert Team explained the counterparts the following role and responsibility of financial/accounting sector of the JCspd.

Table 4.6-1 Role and responsibility

1. SWM cost	: 1) manpower, 2) fuel, 3) repair and maintenance, 4) administration, 5) depreciation
2. SWM fee	: 1) NIS per household, 2) collection system
3. Budget	: 1) budget preparation (regularly in October), 2) budget report to top management and MoLG
4. Management	: 1) collection of SWM fee, 2) payment of expenses, 3) cash control, 4) inventory and fixed assets management, 5) financial report

Secondly, in October 2006, the counterparts and the JICA Expert Team estimated the SWM cost and fee, and prepared the JCspd budget of 2007.

Thirdly, in December 2006, the counterparts and the JICA Expert Team discussed about a new appropriate accounting system of the JCspd to improve the current manual accounting system. So, the two customized accounting software that were broadly used in Palestine was studied precisely.

Fourthly, from the beginning of 2007, the counterparts started to prepare the monthly financial report to the top management, though still manually.

Fifthly, in March 2007, the counterparts and the JICA Expert Team established the transitional accounting system by using EXCEL and started to operate it.

4.6.2 Introduction of New Accounting System

Aiming at running appropriate and speedy accounting/financial management, the JCspd introduced a new accounting system in July 2007 by adopting computerized software. The accounting system was accrual basis such as globally adopted in the business world. The system provided a series of accounting report such as Balance Sheet, Profit/Loss Statement, Assets inventory, and Amount Receivable regarding customers such as each LA.

Two (2) staff of the JCspd and one (1) staff of Jericho municipality were trained in August 2007 prior to the start of operation.

4.6.3 Formulation of Year Budget

(1) Budget Preparation

The year 2007 budget was prepared by the executive director and the JICA Expert Team on the basis of few reliable data.

However, the year 2008 budget was set up by the JCspd itself in cooperation with each organization such as financial division, operation section and customers' relation division.

This was a first experience for the staff. So discussion was frequently made in July and August in 2007 among the staff and the JICA Expert Team regarding the necessary data like below:

- 1) Income estimate, 2) necessary number of manpower and personnel cost estimate, 3) vehicles and equipment procurement and write-off, 4) fuel cost and repair/maintenance cost estimate, 5) miscellaneous cost estimate, and 6) depreciation.

The time schedule and process for preparation was decided as shown in Table 4.6-2. Obviously the JCpsd has continuously prepared the budget by itself afterward.

Table 4.6-2 Time Schedule of JCpsd Budget Preparation of Year 2008

Budget Preparation Procedure of JCpsd	Responsible Staff Name	August			September				October			Nov.	
		10-16	17-24	24-30	31-6	7-13	14-20	21-27	28-4	5-11	12-18	19-25	27-1
1 Budget Preparation Announcement 1) 2008 Budget Policy 2) Schedule of Budget Preparation 3) Distribution of Budget Request Paper 4) Actual Semi-annual Financial Data of Year 2007	Jabbar Jabbar Manal Manal	13th											
2 Preparation of Request Paper by Each Section	Jabbar, Manal, Sultan & Marwan												
3 Submission of Request Paper	Jabbar, Manal, Sultan & Marwan	18th											
4 Summing up by Financial Section	Manal		19th										
5 Review discussion	Jabbar, Manal, Sultan & Marwan	21st					1st						
6 <i>- Preparation of Preliminary Budget</i>	Jabbar & Manal									21st			
7 Review and Approval by AB members	Jabbar											.....
8 <i>- Preparation of Draft Budget</i>	Jabbar & Manal											.....
9 Discussion and Approval by GB members	Jabbar											.....
10 <i>- Preparation of Final Budget</i>	Jabbar & Manal											.....
11 Submission to MoLG	Jabbar												..... 15th

Source: JCpsd

According to this, the budget was discussed and approved in the AB and GB meetings in late October as shown in Table 4.6-3.

Table 4.6-3 Summary of Year 2008 Budget (1,000 NIS)

Items	Year 2007 Budget	Year 2008 Budget	Balance	Remarks
1. Income	1,713	1,619	-94	
2. Expenses				
1) Salary	546	659	+113	Increase of manpower (24 → 30)
2) Fuel	345	219	-126	Estimate based on actual cost
3) Repair & Maintenance	170	222	+ 52	Rent of truck loader
4) Others	246	113	-133	Reduction of tipping fee and procurement
5) Depreciation	406	406	-	
Total	1,713	1,619	-94	

Source: JCspd

4.6.4 Financial Condition of JCspd

According to the decision made in the GB meetings, every LAs had to pay the contribution in 2006 and SWM fees afterward. However, these payments were not in the satisfactory condition; LAs of middle-west area paid 100% of fees, but other LAs did not pay 100%.

The JCspd has already tackled this problem through the following practical actions since the beginning of start-up.

- In order to save the cost, the JCspd had no choice to stop the SWM services to three LAs (Jiftlik, Bardalah and F.B.Dajan) that did not pay. However, the community and council members of Jiftlik and Bardalah wished the SWM services and committed to pay the fees, the JCspd has re-started the services in these areas since September 2007.
- The JCspd staff together with the JICA Expert Team visited directly and held intensive discussion and dialogue especially with the council members and community groups. The discussion and dialogues were focused on their opinion about the JCspd services, their willingness to pay against the services, how to collect the fees and how to collaborate mutually.
- The JCspd and the JICA Expert Team employed four (4) coordinators to collect the fee together with the LA staff and instruct the know-how through the on-the-job-training.
- Through the cooperation of the above coordinators, the JCspd studied and prepared the inventory of households to where the JCspd can actually provide the services judging from the road condition. This study was reflected to the income estimate of Year 2008 budget.

Thus, the financial condition of the JCspd has been improving as shown in Table 4.6-4.

Table 4.6-4 Summary of Financial Condition (NIS)

Financial Items	FY 2006	FY 2007	FY 2008	FY 2009
	Jan.- Dec.	Jan.- Dec.	Jan.- Dec.	Jan.- Sep.
Revenue	48,037	1,011,058	1,315,792	1,083,014
Expenditure	5,244	1,020,029	1,327,823	1,057,495

Note: 1) Depreciation is not included. 2) The subsidy from PNA, NIS134956, was received in December 2009 and not included above.

Source: JCspd

In addition, the JCspd has started the further actions to increase revenue in cooperation with LAs since 2008:

- Review of SWM fee for big waste dischargers in Jericho municipality
- Adoption of new system for SWM collection in rural LAs, so-to-speak, the joint billing with electricity fee

4.6.5 Preparation of Financial Report

The year 2007 financial report was submitted and discussed in the GB meeting in March 2008 as “Year 2007 JCspd Operation Report”.

This was the first experience for the JCspd to prepare the financial report of the year. The executive director and acting financial staff challenged and finalized it spending one month since the beginning of February in 2008 supported by the JICA Expert Team.

The same kind of financial report has been continuously prepared by the JCspd staff, submitted and discussed in the GB meeting. Annual Report of JCspd JJRRV in 2008 were shown in Annex 5.

Chapter 5 PILOT PROJECT

5.1 Medical Waste Management System in JJRRV

A new medical waste management system in JJRRV was proposed and partly modified. Based on the modified system, medical waste was disposed of in the specifically constructed trench in the Jericho landfill site. Although the system called for further discussion or negotiation with some concerned parties to confirm substantially, notification activities of this system to citizens, clinics and hospitals was also carried out in the form of a community meeting and a preparation of leaflet and poster. Also safe handling handbook for medical waste to collectors and landfill site workers were drafted and training was demonstrated using this handbook.

(1) Proposed Medical Waste Management System in JJRRV

The system was proposed under a presumption that the incinerator in the New Jericho Hospital would not be operated for a time being, but was expected to restart its operation in the future. Hence when the incinerator would be operated, the proposed system would be modified slightly. The system was designed considering following facts: (a) there were no clear regulations, laws or by laws regulating medical waste management in Palestine; (b) the generation sources of medical waste were general households and medical establishments, and (c) medical establishment in JJRRV were with a few exception mostly small scale with one doctor and a few medical supporter and thus medical waste generation was not much in volume and in its kind.

1) System I: For medical waste generated by a medical care at home>

The used treatment tool or remained medicine which was categorized as a medical waste should be brought to the healthcare facilities where the patients meet the doctor in charge.

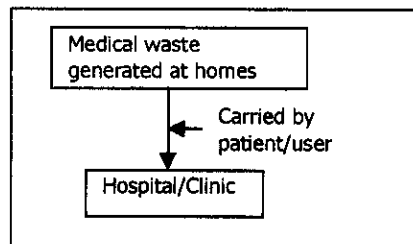


Figure 5.1.1 Management System for Medical Waste Generated at Homes

2) System II: For medical waste generated at clinics in Local Councils and small clinics in Jericho City

This system was applied to clinics in Local Councils and small clinics in Jericho City where amount of medical waste generation was considered to be relatively small, and the types of medical waste were mostly sharps, and small amount of infectious wastes, pharmaceutical waste. Sharp wastes were disposed using so-called a safety box and a similar container, while other hazardous medical wastes were recommended to burn or bury on-site. A filled safety boxes and others medical waste untreated on-site which are generated from clinics under the Ministry of Health (MoH) were collected by the Jericho Governorate Office of MoH and stored at the Office. Those wastes generated at UNRWA clinics were transported to the container at the New Jericho Hospital by themselves. The disposal way for medical wastes generated at the private clinics in Jericho was not settled down as of time of writing this report and thus expressed by the dotted line in the Figure 5.1.2.

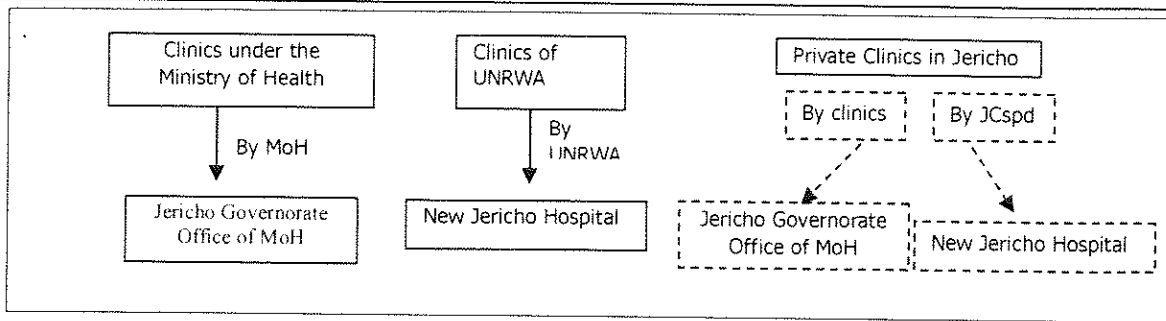


Figure 5.1.2 Management System for Medical Waste Generated at Clinics in Local Councils and Small Clinics in Jericho City.

3) System III: For medical waste generated at hospitals and larger clinics

This system was applied to medical waste generated at the New Jericho Hospital, Jericho Governorate Office of MoH, Al-Islah Clinics and Red Crescent Society. All medical waste generated from those facilities were temporally stored in the container at the New Jericho Hospital which was provided by the JCspd and were transported periodically by the JCspd to the trench at the JCspd landfill site for a disposal. The JCspd provides collection and disposal services of medical waste by free of charge since those services were temporal and a sort of emergency aide by the time when the MoH would take their own role and responsibility for medical waste management.

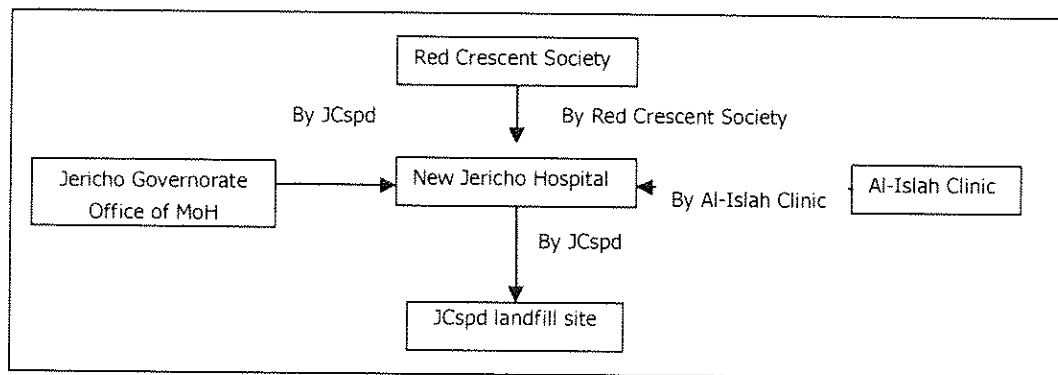


Figure 5.1.3 Management System for Medical Waste Generated at Hospitals and Larger Clinics.

(2) Medical Waste Disposal

1) Construction of Trench for Temporary Disposal

A trench (5m wide x 5m deep x 10m long) was constructed temporarily for exclusive disposal of medical waste at the JCspd landfill site adjacent to the existing landfill site of Jericho. Considering the weather condition at the site no artificial lining system was installed. Notification board and fence were installed to prevent unnecessary access of animals and peoples to the trench. Medical waste hauled to the trench was unloaded mechanically and covered by soil immediately. Once filled up one trench another trench would be constructed next to the previous one.



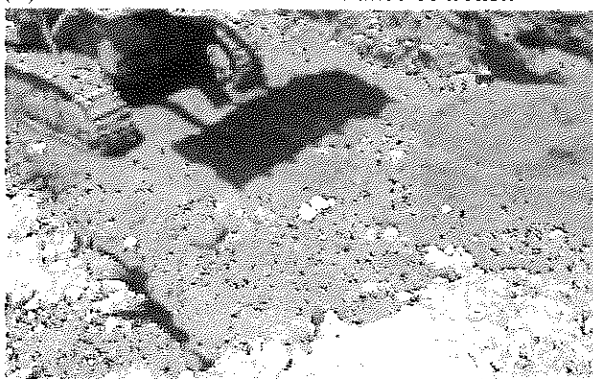
(1) Trench for a medical waste disposal



(2) Unload the waste at the entrance of trench



(3) Apply cover soil onto the waste



(4) Press and level the mound softly

Figure 5.1.4 Temporary Disposal of Medical Waste

2) Hauled Amount until September 2007

The JCspd temporarily accepted the disposal of medical waste since July 30, 2007 once in every two weeks. The hauled volume amounted to 600 kg by 6 times until end September that equals to 100 kg per 2 weeks. The hauled volume was not necessarily correct but estimated and recorded by the JCspd supervisor.

Total generation of medical waste in Jericho municipality area was estimated at 23 to 29 kg/day in the 2nd Year of the Project. Accordingly, around 25% of medical waste generated in the area was hauled to Jericho dumping site.

- 30th of July	: 45 kg
- 2nd of August	: 150 kg
- 14th of August	: 80 kg
- 29th of August	: 106 kg
- 12 of September	: 100 kg
- 28th of September	: 120 kg
- Total	: 601 kg

3) Community Meeting and Training Activities of Medical Waste Management

In order to notify the new medical waste management systems to citizens, several community meetings were carried out by the JCspd and the JICA Expert Team and materials used at the meetings were transferred to JCspd staff. A leaflet and poster were prepared for citizens and healthcare facilities to notify the new system and to get cooperation with the system implementation. Handbook for a safe handling of medical wastes was prepared to reduce the

risk of infections among waste collection worker and landfill site workers who eventually handle hazardous medical wastes. This handbook was intended to raise awareness of the JCspd workers for a dangerous nature of a hazardous medical waste and a need for a careful handling of them. Using this handbook training for the JCspd workers for a safe handling of medical waste was demonstrated by the JICA Expert Team and a similar training will be conducted periodically by the JCspd staff in the future.



Medical Waste Awareness meeting at UNRWA
Aqbar Jabar Camp on July 19, 2007



Workers Training on July 28, 2007

Figure 5.1.5 Community meeting and Workers Training

5.2 Recycling of Agriculture Plastic Waste

(1) Concept

The collection service for agriculture plastic waste was a common requirement of LAs in JJRRV to keep clean and healthy farm land in the area.

A trial collection was carried out in March 2007. In fact, it revealed that it would be easy to collect the agriculture plastic waste if a good and aggressive cooperation of farmer's union and other organization related to agriculture activities could be expected. Then, irrigation pipe and earth cover sheet were especially collected. The irrigation pipe was easily sold out; however, the earth cover sheet could not be sold.

Therefore, this pilot project to collect and recycle agriculture plastic waste was planned to find out the efficient recycle method and to prove technical and economic feasibility for the JCspd.

(2) Programs of the Pilot Project

The pilot project consisted of the following two programs.

Program 1: Collection, storage and sale of plastic waste

Program 2: Preliminary treatment of plastic waste

(3) Program 1: Collection, Storage and Sale of Plastic Waste

1) Contents of Program

Agriculture plastic waste was generated at the time of cropping change and twice a year mainly in June and February in the area. Therefore, the first collection of plastic waste was conducted in June 2007 as below and implemented during one month from middle June until middle July. The second collection was conducted two weeks from February 4, 2008.

2) First Collection in June 2007

First collection of agriculture plastic waste was conducted during one (1) month. In this period, Al-Nour TV, the local TV in Jericho, broadcasted 4 times concerning collection of agriculture plastic waste. Collection was conducted according to planned schedule set in each area as shown in Table 5.2.1.

Table 5.2 1 Outline of Plan on First Collection

Items	Description	Remarks
1. Collection Area	Jericho and South area	Middle and North valley is considered afterward.
2. Storage	Jericho dumping site	At temporary space
3. Collection car and workers	a. Normal truck: 1 unit b. Driver: 1 person c. Collection worker: 2 persons	Using a rent car
4. Working hour	6:00 - 11:00 AM	
5. Collection Program	Jericho: Sunday, Monday and Tuesday Al Newmeh & Eduke: Wednesday. Al Ojah: Saturday. Reserve day: Thursday	Collection period: June 17 - July 15
6. Sale	Recycle factory (by contact) Expected selling price (After washing: NIS600/ton)	Contact buyer when accumulated waste reaches more than 10 ton.

Source: JICA Expert Team

Collected agriculture plastic waste was separated to irrigation pipe and plastic sheet at Jericho dumping site. It was mostly plastic sheet. Total collected amount was six ton only.

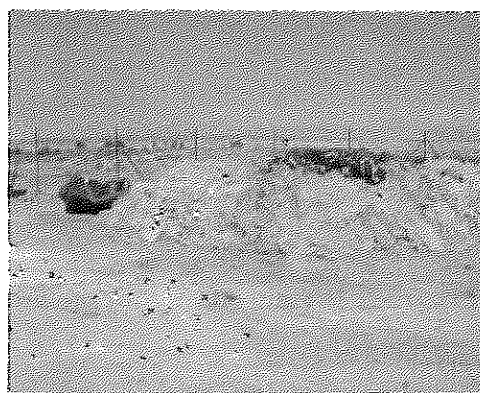
The JCspd and the JICA Expert Team invited buyers and negotiated to sell the waste; however, no transactions was done due to the small waste volume.

3) Second Collection in February 2008

Considering the result of the first collection in June 2007, the second collection was conducted under the subcontract of "General Union of the Palestinian Peasants and Agric Cooperation" during two weeks in February 2008. The Union have collected approximately ten (10) ton of agriculture plastic waste during two weeks using tractor owned by a union's member.



First collection of agriculture plastic waste



Storage of collected plastic waste



Second collection of agriculture plastic waste



Measurement of collected plastic waste

Figure 5.2.1 Collection of Agriculture Plastic Waste

Collection of agriculture plastic waste was conducting twice a year from year 2007 at the cultivate season, February and June.

The method of collection was changed as shown in Table 5.2.2

Mr. Samer is a one of buyer of material from waste pickers and operating the recycle line of the pilot project. He was also collecting plastic waste of greenhouse to treat it in the recycle line by his truck.

It was noted that plastic waste of agriculture earth cover should be crushed and washed to sell. Treated plastic waste (crushed and washed) was sold with 1.7 NIS/kg. While plastic waste of greenhouse was sold after crushing without washing with 1.0 NIS/kg.

Table 5.2.2 Collection of Agriculture Plastic Waste

Month and year	Equipment	Number of collection	Approximate Amount	Remark
February 2007	Normal truck	2 times	1.5 ton	As a study for collection of agriculture waste with cooperation of farmer's union
June 2007	Normal truck	4 week (5 day/week)	More than 10 ton	Collection was conducted by Mr. Samer
February 2008	Tractor	6 times in two week	8 ton	With cooperation of farmers union
June 2008	Crane truck	4 times in 2 week	10ton	With cooperation of Mr. Samer and Jericho Municipality

(4) Program 2: Preliminary Treatment of Plastic Waste

The program 2 was treatment of earth cover sheet collected in program 1. Preliminary treatment of plastic waste consisted of the process such as cutting, washing, drying and mixing. Treatment process was a combination of both mechanical and manual treatment. Treatment capacity was between 0.5 and 1.0 ton/day.

1) Selection of Process for Preliminary Treatment

To study the recycle process applied in the Waste Bank, the JICA Expert Team and the JCspd staff visited the recycle facilities in Nablus, Ramallah and Hebron. However, almost all facilities treat mainly plastic waste generated by plastic factories that was not dirty and HDPE (High Density Polyethylene) used for chair and hard bottle. Therefore, their major process is cutting and granulates.

One of recycle factories in Hebron is treating the used irrigation pipe and agriculture plastic earth cover sheet using crushing and washing process. Therefore, preliminary treatment of agriculture plastic waste for the pilot project is selected to use similar process of the factory in Hebron as shown in Table 5.2.3 (The JCspd Study Tour member in Jordan visited a recycle factory in Jordan where the factory collects agriculture plastic waste mainly consisted of plastic waste used for green house, presses it, and then sends to Saudi Arabia for recycling without washing.)

Table 5.2.3 Summary of Preliminary Treatment (Earth Cover)

Items	Description	Remark
1. Type of plastic to be treated	Earth cover sheet used for agriculture	-
2. Treatment capacity	Less than 1 ton/day using combination of mechanical and manual process	-
3. Treatment method	crushing and washing	Some equipment and tools are necessary
4. Place for treatment	-Jericho landfill site: permanent arrangement -Shop in Jericho city for temporary arrangement for test operation in March 2008	Provision of 3 phase electricity and water supply are necessary to operate preliminary treatment process.

Source: JICA Expert Team

3) Preliminary Treatment and Recycle Process

Base on the advice of the owner of recycle factory in Hebron, the preliminary treatment process to be introduced for the pilot project was determined as shown in Figure 5.2.2 and 5.2.3.

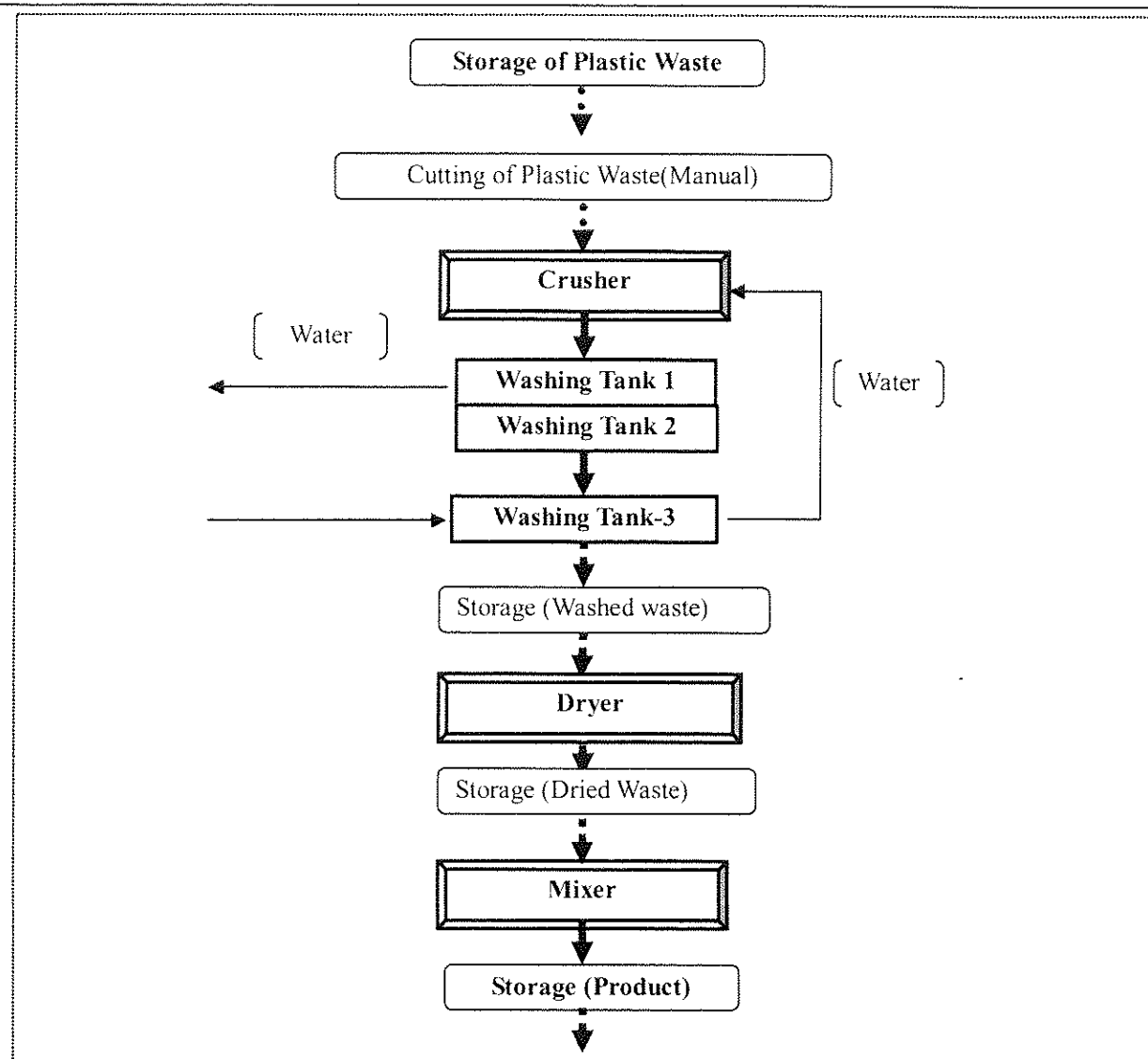


Figure 5.2.2 Preliminary Treatment Process

4) Temporary Installation of Recycle Process Line

Originally, the recycle process line was planned to be constructed at Jericho landfill site. However, electricity was not available by the middle of March 2008; so, the line was installed temporarily at the empty shop in Jericho (in Ein Sultan Camp) to test the treatment operation.

Specification of components of recycle process line was shown in Table 5.2.4.

5) Number of Workers for Test Operation

The test operation was conducted under the supervision and guidance of subcontractor with three (3) workers. The test operation started on February 25, 2008 and continues until March 15, 2008.

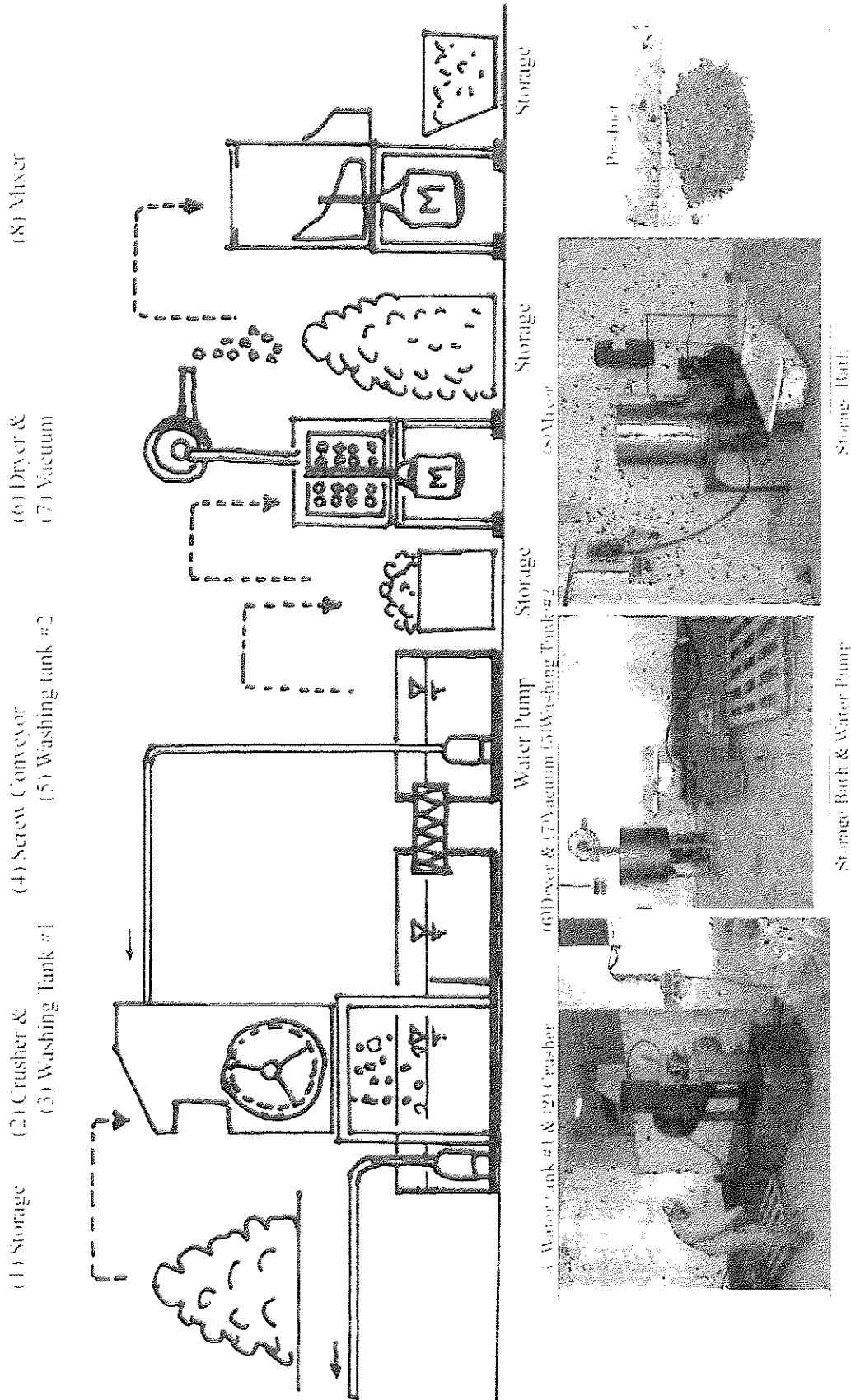


Figure 5.2.3 Recycle Treatment Line

Table 5.2.4 Specification of the Components of Recycle Process Line

Components	Specification	Quantity
Crusher	width 50 cm, 35 horsepower (Manual loading of waste)	1 unit
Water basin #1	4 m x 1 m, depth 0.5 meter with divider (under the crusher)	1 unit
Screw conveyer with motor	1.3 meter	1 unit
Water basin #2	2 m x 1 m, depth 0.45 m (Manual removal of waste)	1 unit
Water pump	to circulation and drainage of water	1 unit
Dryer	diameter 70 cm, 5 hp (Manual loading of waste)	1 unit
Vacuum	to removal of waste from dryer	1 unit
Mixer	diameter 60 cm, 40 hp (Manual loading of waste)	1 unit
Air compressor	-	1 unit
Electric installation	440 v / 3 phase, 63 amp, Main switch board	1 unit
	Switch board 50 amp	2 units
	Switch board 24 amp	5 units

Note: Line Capacity is 0.5 ton/8 hour operation

Source: JICA Expert Team

6) Outline of Operation.

Outline of the operation of recycle process line was shown in Table 5.2.5.

Table 5.2.5 Contents and Process of Work for Operation of Recycle Line

Work item	Contents of Work	Remark
1. Preparation	(1) Check of worker and machine	-
	(2) Confirmation of work on the day	-
	(3) Communication with the JCspd on the today's work and necessary material and tools	Collection schedule of plastic waste, etc
2. Transportation of waste	(1) Transportation by the JCspd using municipality vehicle	Transportation from Jericho landfill site to recycle shop
3. Storage of waste	(1) Storage in front of recycle shop	
4. Preliminary Cutting (By two workers)	(1) Plastic sheet shall be cut less than two meter manually to keep safety.	At the entrance recycle shop by two worker
	(2) Storage at the entrance	
5. Running of Crusher and Washing Process (Crusher by 2 worker, washing by 1 worker)	(1) Confirmation of cleaning of crusher	No operation of Mixer
	(2) Switch-on of crusher, water pump and screw conveyer	-
	(3) Filling of plastic waste into crusher by two worker	Attention to machine sound; machine shall be stopped then clean up when sound become large.
	(3) Removal of washed plastic from water tank #2 to storage tank of washed waste and supporting of transfer of plastic waste from water tank #1 to # 2 by one worker	-
	(4) Stop of running machine - Full of washed plastic in storage tank - Clog of crusher, - Strange sound of machine	-
	(4) Crusher machine clean up	by two worker
	(5) Change of water	-
6. Running of dryer	(1) Filling of washed plastic	(by one worker)
7. Running of mixer	(1) Filling of dried plastic	(by two worker)
8. Storage of product	(1) Packaging of product	-
	(2) Weighing and record	-
9. Change of water	Every other day (water basin #1)	-
10. Removal of sludge	Every other day (water basin #1)	-
11. End of work	(1) Storage and record of product amount	-
	(2) Check of plastic waste to be treated next day	

	(3) Cleaning of rusher	-
	(4) Cleaning of dryer	-
	(5) Cleaning of mixer	-
	(6) Check and record of electric meter	-
12. Maintenance work	(1) Daily check	-
	(2) Crusher	Clean up everyday
	(3) Water tank #1 and screw conveyor	-
	(5) Water tank # 2 and water pump	-
	(7) Dryer	Clean up everyday
	(8) Vacuum	-
	(9) Mixer	Clean up everyday
	(10) Air compressor	-

Source: JICA Expert Team

7) Estimate of Cost and Income

The operation cost and sales price was estimated as shown in Table 5.2.6. The financial results were not available at this moment; however, the JCspd and the JICA Expert Team would continue to pursue the way and method to fulfillment of breakeven point. The recycle line was moved to the Jericho landfill site in August 2008 and operated there.

Table 5.2.6 Estimated Cost and Revenue

Items		Cost and Revenue
(1) Pre-condition	Daily treatment amount	0.5 ton/day (8 hour operation)
	Collection of Agriculture plastic waste	Daily collection amount 1.0 ton/day Vehicle: JCspd vehicle to be used Driver: 1 person Worker: 1 person
	Operation of recycle line	Manager: 1 person Worker: 3 persons Total: 4 persons
	Sales of product	Transport to recycle factory (Ramallah or Hebron) Sales price: .0-1.8 NIS/kg
(2) Revenue	Sales of product	1,000- 1,800 NIS/ton
(3) Expense	Collection of plastic waste	Vehicle and fuel: 100 NIS/day Personnel : 70 NIS/day x 2 = 140 NIS/day Total: 240 NIS/ton
	Operation of recycle line	Manager: 100 NIS/day Worker: 70 NIS x 3 person = 210 NIS/day Electricity: 40 Hp/0.75 x 8 hour x 0.7 = 300 kWh 300kWh x 0.5 NIS/kWh = 150 NIS/day Water: 0.5 ton/day x 1 NIS/day = 0.5 NIS /day Total: 460.5 NIS/day / 0.5 ton/day = 920 NIS/ton
	Sales Cost	Transportation: 1,000 NIS/trip / 5 ton /trip - 200 NIS/ton
	Total Cost	1,360 NIS/ ton
(4) Balance	= (2)- (3)	Between deficit of 360 NIS/ton and profit of 440 NIS/ton

Source: JICA Expert Team

8) Primary Treatment of Agriculture Plastic Waste.

Recycle line was installed at the rent shop in Ein-Sultan at end of February, 2008. Recycle line was operated as shown in Table 5.2.7.

Table 5.2.7 Operation of Recycle Line

Duration	Situation	Remark
The end of February to March, 14, 2008	Operation by Contractor (Mr. Rajab)	Installation and test operation
From March 15 to March 19, 2008	Operation by Mr. Samer	Under the agreement with Mr. Samer
From March 20 to May 7, 2008	No electric supply	
From May 8 to May 16, 2008	Operation with crushing and washing	Plastic waste of earth cover
From May 17 to July 11, 2008	Operation with crushing (without washing)	Plastic waste of greenhouse
July 11, 2008	Shift recycle line to Jericho landfill site	
July 24, 2008	Completion of Recycle house	
August, 2008	Re-start of operation of recycle line	
October, 2009	Test operation of recycle line at Jericho landfill site	

9) Treated amount, sold amount and income

Treated plastic waste was sold as shown in Table 5.2.8. Some of production was sent to recycle factory as a sample.

Table 5.2.8 Treated Amount, Sold Amount and Income

Date	Type of treatment	Sold amount	Unit price for selling	Income	Remark
May 16	Crushing and washing	640kg	1.7 NIS/kg	1,088 NIS	Remaining product is sent to factories as a sample
June 24	Crushing	2,000kg	1.0 NIS/kg	2,000 NIS	
July 8	Crushing	2,000 kg	1.0 NIS/kg	2,000 NIS	
July 11	Crushing	2,000 kg	1.0 NIS/kg	2,000 NIS	
Total		6,640 kg		7,088 NIS	

10) Expense

Expense of the recycle line was summarized in Table 5.2.9.

Table 5.2.9 Expense of Recycle Line (from Middle of March until July 11, 2008)

	Samer	JICA Expert Team	Total	
1. Investment				
Cost of electric power increase		2,867 NIS	2,867 NIS	At beginning
2. Running Cost				
1) Electric consumption cost	1,572 NIS	1,788 NIS	3,360 NIS	
2) Maintenance	500 NIS	2,000 NIS	2,500 NIS	
3) Personnel cost	6,160 NIS		6,160, NIS	2 workers x 44 day x 70 NIS/day
4) Transportation cost	1,000 NIS		1,000 NIS	
5) Collection cost	1,000 NIS		1,000 NIS	
6) Rental fee		6,562 NIS	6,562 NIS	\$1,875 x 3.5 NIS/\$
Sub total running cost	10,232 NIS	10,350 NIS (3,788 NIS)*	20582 NIS (14,020 NIS)*	(* excluding rental cost)
Ground totoal	10,232 NIS	13,217 NIS	23,449 NIS	

Note: Figure in () * is excluding rental cost of house.

As shown in above two tables, income was only 7, 088 NIS while expenses after middle of March was 23,449 NIS.

After shift of recycle line, rental cost of house would be zero (0). But expense was still twice of income according to above record. It was necessary further effort to generate income from recycle activities through more production and/or increase of selling price with better quality of products.

Chapter 6 ACHIEVEMENT AND RECOMMENDATIONS

6.1 Result and Achievement of Action Plan

The purpose of the Project was to establish the sustainable and sanitary SWM system in JJRRV, and to disseminate the experience of this Project into other area of Palestine. This Project started on September 2005 on the basis of the agreement between Palestine and Japanese sides in July 2005 and the establishment of JCspd JJRRV in August 2005.

In order to achieve above purpose, the Project was implemented to fulfill following conditions required for sustainable and sanitary SWM in JJRRV.

- (1) To introduce regional SWM system and to implement the collection service in the small LAs
- (2) To stop open dumping and to introduce the sanitary landfill
- (3) To procurement of the collection equipments through Japan's Grant Aid
- (4) To share the cost among municipalities and residents
- (5) To support the regional SWM system by MoLG
- (6) Entirely commitment of Jericho City

Action Plan consisted of six (6) components to fulfill above conditions and activities necessary to realize the Basic Plan approved in August 2006.

- 1) To raise public awareness on JCspd service and payment of service fee
- 2) To provide solid waste collection service for all 17 LAs
- 3) To introduce and implement sanitary disposal
- 4) To establish the maintenance system of equipment
- 5) To set up the JCspd organization, to secure staff of the JCspd and to prepare rules
- 6) To establish the accounting system

Steady implementation of Action Plan would be only method to secure the support of MoLG and strong commitment of Jericho City

Result and achievement of action plan was shown in Annex 1 and fulfillment on above conditions were shown in Table 6.1.1

Table 6.1.1 Achievement and fulfillment of conditions

Items	Fulfillment	To be fulfilled
1. Public consensus on SWM service and payment of service fee	Most of residents satisfied the service of JCspd and accepted the payment of service charge.	
2. Provision of SWM service in JJRRV	JCspd provided SWM service to 16 LAs out of 17 LAs in JJRRV and continued three (3) years from January 2007.	Expansion of service in Jiftlik and Froosh Bait Dajan.
3. Introduction of sanitary landfill	Jericho dumping site was improved to sanitary landfill site and four (4) illegal dumping site were stopped to use.	Implementation of sufficient covering soil
4. Establishment of maintenance system	Maintenance system was established with cooperation of Jericho municipality.	
5. Set-up JCspd organization, staff and rules	Organization structure, staff and rules of the JCspd were secured with cooperation of Jericho Municipality.	Fulfillment of Planning Division
6. Establishment of accounting system	Accounting system of the JCspd was established and computerized.	Strengthening financial independence
7. Procurement of necessary equipment	Collection vehicle and landfill equipment were delivered by EU project and UNDP project funded by Japanese Government.	
7. Payment of service charge by LAs and	Payment of LAs reached 93 % in 2009 and most of operation cost was covered	Further improvement of payment of LAs

residents	by payment of LAs and residents.	
8 Support of MoLG	JCspd JJRRV received subsidy of PNA in September 2008 and December 2009	Continuously and steadily disbursement of subsidy and development plan of future waste disposal system in JJRRV
9. Commitment of Jericho Municipality	Jericho Municipality paid strong commitment for operation of JCspd JJRRV.	

(1) Acceptance of residents on JCspd service and payment of service charge

To obtain residents acceptance on JCspd service and payment of service charge, JCspd and JICA Expert Team held many community meeting in 2006 and 2007. Also, JCspd paid effort to continue SWM service as much as possible,

It is obvious that JCspd couldn't continue the service without the payment of service charge by LAs. The JCspd put a principle that JCspd would not provide the service without payment of service charge to avoid negative impact caused by the LAs which would not pay the service charge. However, collection of service charge faced difficulty because priority of SWM service in JJRRV was not high. Therefore, JICA Expert Team employ fee collectors to support LAs, to improve collection of service charge and to continue the service. However, no payment of service charge and suspension of service was repeated several times. After negotiation and partial payment was done, the JCspd restarted the service.

Social survey was conducted in July 2008 and December 2009 to know understanding of residents on JCspd service and payment of service charge. The result of both survey confirmed that most of residents satisfied the JCspd service and accepted the payment of service charge.

Most of LAs located in north and middle part of JJRRV received SWM service from January 2007 with the support of the Project.. Although several villages did not want SWM service with the payment of service charge, the JCspd obtained residents trust and support as the result of SWM service providing three years continuously.

In Jericho City, the new collection system just started since the new collection equipment was delivered in September 2009 although the dumping site was improved at beginning of 2008. Therefore, public understanding in Jericho city for the JCspd service was not so high..

(2) Regional SWM and SWM service for LAs

JCspd JJRRV provides the collection services for 16 LAs among 17 LAs in JJRRV. The SWM service started from January 2007 and continued its operation. JCspd JJRRV manages SWM service, staff, equipment, facilities and has financial base for operation. Therefore, JCspd JJRRV became sustainable organization to provide SWM service for all LAs in JJRRV thus the Regional SWM system was established in JJRRV.

JCspd JJRRV is operated based on the payment of service charge by member LAs. The Payment was improved year by year and became 93 % in 2009. Also the JCspd JJRRV received subsidy of PNA in September 2008 and in December 2009 financial situation of JCspd JJRRV became stable.

The JCspd covered all 17 LAs at the starting services in January 2007; however the JCspd suspended the services to the 3 LAs (Jiflik, Froosh Beit Dajan and Bardala) afterward from the beginning of April 2007 because of no fees payment from them. The JCspd had a policy to provide the service only to the LAs which pay the fees. Jiftlik and Froosh Beit Dajan are special village that have only "C" area where need permission of Israel side to construct any

buildings. Also the houses are scattered in wide area. Therefore, residents and LAs put their priority in other field and not in SWM then they will not pay the service charge. Bardala did not pay service charge because of internal conflict in the village. Several LAs in JJRRV had internal conflict same as Bardalah. Existence of a group that did not pay service charge made LAs difficult to persuade other residents. As a result, no payment to the JCspd was made by such LAs.

The JCspd made efforts to re-start the service in these 3 areas by providing the PR activities including intensive dialogue with the head, council members and communities. The JCspd and JICA Expert Team made community meetings in Jiftlik and confirmed that some communities of Jiftlik demanded SWM service with payment of service charge. JCspd restarted SWM service in part of Jiftlik in August 2007..

The services in Bardalah re-stated in August 2007 and partial area of Froosh Beit Dajan restarted in November, 2007. The JCspd suspended the service again in 5 LAs (Jiftik, Froosh Beit Dajan, Bardala, Kardara and Ein Al-Beida) from January 2008 due to the reason mentioned above: Obviously the JCspd was required to make effort continuously for re-start of the services in these 5 LAs.

Three LAs in north area and the JCspd made intensive discussion to re-start the service. LAs in area were explained that residents need container for collection and they did not accept the service and payment without the container. JCspd and LAs discussed and agreed that:

- JCspd delivered barrels on the condition that LAs would pay half of the cost of it in advance and JCspd bore remaining half.

LAs would pay 100 % service charge of them after restarting the service.

Based on this agreement, JCspd re-start the service in the north area from January 2009 using standard barrel (capacity 60 liter) for solid waste collection. Payment of service charge in north area was not sufficient but improving through introduction of prepaid system for electricity and surcharge of SWM fee on it. Accordingly, JCspd was providing collection service to 16 LAs from January 2009.

(3) Sanitary disposal

In the Project, a part of Jericho landfill site was improved from open dumping site to sanitary landfill site as a pilot project. Jericho landfill site was introduced semi-aerobic landfill structure which was common structure used in Japan. Based on the success of the pilot project, sanitary landfill site was expanded to the whole area of Jericho landfill site.

JET made guidance about operation and maintenance. the manual for operation and maintenance was prepared. This manual was visualized as DVD.

This experience would be a model for improvement existing open dumping site to sanitary landfill site.

However JCspd JJRRV had weak financial capacity then could not implement soil covering sufficiently because of shortage of equipment to transport covering soil. From beginning of 2010, JCspd would start complete operation of the landfill site including sufficient covering soil using a new dump truck delivered through UNDP funded by Japanese Government.

(4) Management and maintenance of equipment

Maintenance tools/equipment and spare parts of existing collection vehicles were procured in March 2006 to strengthening the capacity of Jericho Workshop. JCspd JJRRV made contract with Jericho municipality for maintenance of equipment. JCspd JJRRV manages and maintains equipment smoothly in cooperation with Jericho municipality based on this contract

after starting of SWM service from January 2007.

Maintenance of equipment is indispensable to provide punctual solid waste collection and require mechanical engineer and technicians, and workshop and maintenance tools/equipment. Experience of the contract with major municipality which have staff and workshop is a model for other JCspd for smooth start of SWM service.

(5) Organization strengthens

JCspd JJRRV established the organization structure and placed 19 staff and workers at the start of SWM operation in January 2007. JCspd employed guards of landfill site, driver, operator of landfill equipment and workers and became 27 staff at January 2010.

In order to develop the independency of JCspd JJRRV, it is necessary to arrange necessary workers, especially technical experts, planners, and reserve workers in cooperation with Jericho municipality

(6) Accounting system

JCspd JJRRV finished the introduction of a new accounting system with computerized software. Annual report of JCspd was prepared using the data compiled in this financial software. Same accounting system was introduced for other JCspd through Follow-up Cooperation in 2008/2009. They need to secure the concrete financial base in order to promote the advanced management and to develop the independency from Jericho City.

6.2 Recommendation for further improvement

Administration Body should have more responsibility to operate and set goals of JCspd JJRRV because Administration Body is the decision-making body of JCspd JJRRV. Until now, Executive Director was overcharged with the important duties of Administration Body, such as to secure the budget source. Administration Body should take more responsibility to level-up JCspd JJRRV activities.

General Body should have more responsibility to guide their community and to fulfill their responsibility towards JCspd.

Solid waste should be disposed of at sanitary landfill site. Open dumping is not acceptable. Therefore, the cost for sanitary landfill should be paid. It is bitter experience that disregard of proper landfill make difficult to secure landfill in many country and construction of landfill site will rejected by residents. JCspd should give much importance of proper landfill operation and should make covering soil. Now JCspd JJRRV has enough equipment then only the strong intention will be required to keep clean landfill site.

Regional solid waste management system is working. JCspd should cooperate with Jericho municipality not only the maintenance of equipment but also to create more base to secure human resource and financial source. Also JCspd should have more independence in view point of organization and financial base. Administration Body should manage JCspd to move such direction.

Reduction of solid waste become important issues and required to implement in JJRRV also. For the effective reduction of solid waste, active cooperation of residents will be indispensable. PR section of JCspd should be strengthened to maintain resident cooperation and to promote reduction of solid waste.

JCspd JJRRV makes large effort to create financial base and almost succeed for sustainable operation. JCspd should continue this effort. Also, subsidy for JCspd is great progress to make sustainable operation. JCspd should create more financial source because more cost for transportation and disposal will be necessary until the new disposal site will be

constructed,

Jericho and Jordan river rift valley is most poor area of West Bank. Also JCspd is providing solid waste management service to large and scattered area. Therefore, more support of MoLG will be necessary considering this point.

ANNEX

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B. Improvement of collection and transportation system	Sultan Roma Wadee A Hetal Akio Ishii	1. To start-up JCSpd service in 2007. 2. To improve collection and transportation system	B-1: Short term collection and transportation plan	B-1-1 To survey the present condition of collection and transportation (container location check, and time and motion survey) B-1-2 To make SWM plan for FY 2007 (target waste and service level) in 2006 B-1-3 To expand service area	B-1-1 B-1-2 B-1-3	1) Solid waste surveys were conducted, such as solid waste amount and composition, container location, time and motion, agriculture waste, night soil and recycling. 2) SWM plan for FY 2007 was formulated in 2006. 3) SWM plan for FY 2008 was formulated in Oct. 2007 1) SWM service of JCSpd JIRRV started from January 2007 2) JCSpd service covers 12 L.As as of March 2008. 3) JCSpd service covers 16 L.As as of Jan. 2009.	
			B-2: To improve collection and transportation system	B-2-1 To formulate SWM plan for FY 2008 (target waste and service level) B-2-2 To check the collection and transportation efficiency (Collection ratio, service area, and service level) B-2-3 To reallocate containers. B-2-4 To reallocate collection equipment. B-2-5 To introduce station collection system in a part of Jericho city. B-2-6 To improve collection system. B-2-7 To formulate SWM plan for 2009 (target waste, service level.)	B-2-1 B-2-2 B-2-3 B-2-4 B-2-5 B-2-6 B-2-7	1) SWM plan for FY 2008 was formulated by the staff of JCSpd 2) A patrol car was procured in March 2008 to manage especially waste collection in all areas. 1) Operation is monitored everyday by the supervisor of the technical operation section. 1) JCSpd conducted reallocation of container in Fasaal and in Jericho city. 1) New collection system was expanded in Jericho using new collection vehicles provided through UNDP on Sept. 2009. 1) Pilot project on station collection was conducted in December 2007. 1) Regular collection service is provided in 16 L.As in Jan. 2009. 2) JCSpd provide barrels for solid waste collection in north area 1) SWM plan for FY 2009 was formulated by the staff of JCSpd in October 2008	
			C-1 Formulation of short term disposal plan	C-1-1 To prepare disposal plan for following sites in 2007 C-1-2 To prepare disposal plan for following sites in 2008	C-1-1 C-1-2	1) Disposal plan of FY 2007 was prepared using 1) Jericho, 2) Al-Ojah, 3) Tovlan and 4) Tubas 1) Disposal plan of FY 2008 was prepared using 1) Jericho, 2) Al-Ojah, and 3) Tubas transfer station 2) Disposal plan of FY 2009 was prepared. 1) Candidate sites have been listed. 2) Alternative plan is presented.	
	C. Improvement of disposal system	Sultan Roma Wadee A Hetal Hiroshi Abe & Masahiro Siatō	1. Designation of the dumping site 2. Improvement of existing site and its operation	C-2 Study on future landfill site	C-2-1 To study possible candidate site in areas A and B	C-2	1) Candidate sites have been listed. 2) Alternative plan is presented.
				C-3: Improvement of Jericho dumping site	C-3-1 To prepare an improvement plan C-3-2 To construct necessary facilities	C-3-1 C-3-2	1) Improvement plan (Design drawing) was prepared. Extension plan of Jericho dumping was prepared. 1) Necessary facilities were constructed in March 2007 under the Pilot Project. Extension landfill site was constructed in January 2008 including trench for medical waste and sewage drainage. Additionally, garage, fence and electricity were constructed in March 2008. 2) Recycle house is constructed in August 2008.
				(Improvement of operation)	C-3-3 &5 To cover with soil C-3-4&6 To conduct environmental monitoring	C-3-3&5 C-3-4&6	1) Covering soil started on Jan. 31, 2007. 2) Operation manual and its DVD was prepared. 1) IEE of Jericho disposal site was conducted in September 2006. First round of ground water analysis was conducted four times from Sept. 2006 until Feb. 2008. 2) Environmental and social consideration report was prepared in June 2008.

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D. Improvement of maintenance system	Abdel-Jabbar Sultan Roma Hiroshi Abe	3. Prevention of illegal dumping	C-4: Improvement of Al-Ojah dumping site (Improvement of operation) C-5: Monitoring of illegal dumping C-6 Provision of SWM service	C-4-1 To prepare an improvement plan	C-4-1	1) Improvement plan was prepared to conduct covering soil and fence. 1) To be prepared a budget for construction but no budget is available.
				C-4-2 To construction necessary facility	C-4-2	1) Backhoe loader is sent to the site once a month to cover waste (continue).
				C-4-3 &5 To cover with soil	C-4-3&5	1) First round of ground water analysis was conducted four times form Sept. 2006 until Feb. 2008.
				C-4-4&6 To conduct environmental monitoring	C-4-4&6	1) Illegal dumping sites were listed
				C-5-1 To prepare inventory of illegal dumping	C-5-1	1) A program was prepared in September, 2007.
				C-5-2 To check and monitor periodically	C-5-2	2) Jericho landfill site started to receive medical waste and night soil provisionally from July 2007.
				(see collection and transportation)	C-6	1) As of March 2008, collection covers 12 L.A. 2) Collection services covers 16 L.A. as of Jan 2009.
				D-1-1 To conclude contract on equipment maintenance between Jericho and the JCspd.	D-1-1	1) Agreement was prepared and maintenance is conducted by Maintenance Section of Jericho Municipality.
				D-1-2 To conduct monthly check and repair of equipment at Jericho workshop	D-1-2&4 D-1-3	1) The periodical check and repair is conducted by Jericho Garage 1) The contract continues. Repair and maintenance work is conducted in good manner.
				D-1-3 To renew maintenance contract	D-2-1	1) Recording system has started and continues
D-2-1 To prepare recording system	D-2-2&4	1) Technical section of JCspd records vehicle operation and maintenance. Jericho garage keeps maintenance/repair record.				
D-2-2 &4 To record operation date and hours of equipment	D-2-3	1) Operation rate is analyzed and presented in Workshop.				
D-2-3 To analyze operation ratio	D-2-5	1) To be improved by the JCspd itself				
D-2-5 To improve operation ratio	D-3-1	1) Checklist has prepared				
D-3-1 To prepare checklist of equipment	D-3-2&4	1) Daily check is conducted by driver and continues				
D-3-2&4 To conduct daily check by operator	D-3-3&5	1) A training program is prepared and conducted 3 times.				
D-3-3&5 To provide training for operator	D-4-1	1) Equipment was purchased in March 2006 and used for maintenance of equipment.				
D-4-1 To prepare equipment for monthly check	D-4-2	1) Jericho workshop has necessary equipment and continues to repair equipment.				
D-4-2 To prepare equipment for normal repair	D-4-3	1) No plan at moment. The training of drivers for the simple inspection before driving was conducted by Jericho WS.				
D-4-3 To provide training for engineers and technicians						
2. Strengthening of maintenance capability of Jericho workshop						

The Project for Capacity Development on Solid Waste Management in the Jericho and Jordan River Rift Valley
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E. Strengthening organization and Institution	Abdel-Jabbar Akio Ishii	1. To prepare Organization for JCspd 2. To prepare the JCspd ordinance	E-1 To set up the JCspd organization. E-2: To enact the JCspd ordinance	E-1-1 To check the necessities for JCspd's job (2006) E-1-2 To decide the necessities for JCspd's job (2006) E-1-3 To decide the job description for 2006 - 2007 E-1-4 To establish JCspd organization E-1-5 To allocate staff E-1-6 To evaluate the present JCspd organization	E-1-1 E-1-2 E-1-3 E-1-4 E-1-5 E-1-6	1) The necessities for the JCspd job were checked. 1) The necessities for the JCspd's job were decided. 1) The job description for necessary job were prepared 1) The JCspd organization was established and continues... 2) Safety and Sanitation Committee was organized, and meetings were held in August 2007 and February 2008, July 2008, October 2008 and September 2009. 1) 19 staff and workers were employed in January 2007. 21 staff and workers as of October 2007. 23 in August 2008, 27 in January 2010. 1) Enhancement of organization and staff is discussed among top management to deal with emergency case. 1) Draft of the JCspd ordinance is under the study.
F. Establishment of accounting system	Ahmad Dreat & Manar Al-Fityani Noboru Osakabe	1. Establishment and development of accounting system is essential for JCspd to obtain a proper SWM cost and rational SWM charges.	F-1 Introduction of a computerized accounting system F-2: SWM costs F-3 : SWM charges F-4 Budget preparation and management F-5: Fund control	E-2-1 To study the requirements for JCspd ordinance (2007) E-2-2 To draw up draft JCspd ordinance E-2-3 To discuss the draft ordinance of JCspds. E-2-4 To enact JCspd ordinance F-1-1 To study the accounting system F-1-2 To introduce the accounting system for JCspd F-2-1 To estimate SWM costs by calculating various types of costs in line with SWM service area, collection frequency, etc. F-2-2: To estimate SWM unit cost per ton and per capita F-3-1 Based on F-2, to set rational SWM charges (from 2006) F-4-1 To prepare yearly budget (from 2006) F-4-2 To check monthly progress of the budget and report to top management (from 2007)	E-2-1 E-2-2&3 E-2-4 F-1-1 F-1-2 F-2-1 F-2-2 F-3-1 F-4-1 F-4-2 F-5-1	1) Ordinance preparation committee was organized in May 2008. 2) First draft was prepared in August 2008 and is continued to improve. 1) Appropriate accounting system was studied and decided. 1) The appropriate software was introduced in July 2007 1) SWM cost was estimated in 2006, 2007 and 2008. 2) SWM cost is to be estimated in 2009 considering the new equipment delivered in the year. 3) Cost for 10 large SW dischargers was estimated. 1) SWM unit cost was estimated. 1) SWM fees for 2007 were set and considered into the 2007 budget. 1) Budget of 2007 and 2008 was prepared. 2) Budget of 2009 was prepared in October 2008. 3) Budget of 2010 is to be prepared in October/November 2009 1) Financial report is prepared for top management in every month 2) Year 2007 financial report was prepared. 3) Year 2008 financial report was prepared. 1) Cash position is checked and controlled regularly and continues.

ANNEX-2 Basic Plan of Solid Waste Management (SWM) Service by JCspd

1. SWM Service in JJRRV

(1) Background

There are 17 localities in JJRRV area but solid waste is collected in only twelve (12) localities (by the local authority in nine (9) localities, by the residents themselves in 2 localities and one (1) by both)¹. Except for Jericho municipality, however, local authorities do not essentially have the capacity to provide a suitable SWM service and, therefore, a JCspd is established to provide a joint SWM service for the area.

(2) Principles of JCspd

- To conserve the environment in the area through comprehensive SWM services
- To promote the waste reduction and recycling
- To achieve a high efficiency of SWM services through the operation in wider area than ever
- To carry out SWM service with the collaboration among local communities, local authorities and JCspd

SWM services, after the transfer from the 17 local authorities, are to be improved stage by stage in line with the introduction of new equipment and new long-term landfill site. (It is hoped that the new equipment will be provided through Japanese grant aid. The new landfill site is a matter to be dealt with in the coming years.)

2. Scope of SWM Services to be transferred to JCspd

(1) Scope of SWM Services to be transferred

The 17 local authorities in question will transfer the entire services of SWM, i.e. collection, transportation, treatment and disposal of solid waste, to JCspd, and the JCspd will accept such services to be transferred.

(2) Date of Transfer

The transfer shall take place on 1st January, 2007, by which time the JCspd shall have completed the following preparations beforehand.

- ◇ To secure landfill site(s) so that the JCspd can provide an effective SWM service
- ◇ To secure offices, equipment, and garages
- ◇ Recruitment of JCspd staff members
- ◇ Formulation of organization structure, functions required to the sections, working rules, etc
- ◇ To procure operation funds

The existing equipment and landfill sites will be used for immediate purposes, but their medium to long-term prospects will be considered to be matters for future review.

3. Establishment of SWM System

¹ Solid waste collection service by LAs has started at Zbidat, part of Marj Najah, and 5 LAs located at west of Hamra check point.

(1) Action Plan of Transfer

An action plan of transfer shall be formulated and approved to ensure the smooth transfer of SWM service from the local authorities to the JCspd.

a) Objectives

- ✧ To clarify the contents of SWM service after transfer
- ✧ To determine the necessary work items required for transfer and their contents and schedule
- ✧ To clarify the improvement measures for environmental conservation, reduction of waste, expansion of the service area and a higher service efficiency

b) Taskforce to prepare and facilitate the Transfer

- ✧ Administrative body members and the JCspd staffs

c) Skeleton of Transfer Schedule

- ✧ August 2006: Approval of the transferring action plan
- ✧ August 2006: Start of transferring procedures
- ✧ October 2006: Application for the FY 2007 budget
- ✧ January 2007: Transfer and start of SWM services

d) SWM Service after Transfer

See Chapter 4.1.4:

Aiming at;

- ✧ Provision of SWM service for 17 localities
- ✧ Improvement of the SW disposal method: prohibition of illegal dumping as well as open dumping

e) Concrete Transfer Items and the respective Transfer Schedule

(2) Transfer/Acquisition of Facilities and Equipment

The inheritance of the facilities and equipment currently possessed by the local authorities shall be the first priority and new facilities and equipment will be acquired if necessary.

a) Vehicles and Garages²

The vehicles and equipment currently possessed by the local authorities shall be used. Two garages will be set up at the following locations to ensure the efficient operation of the fleet.

- ✧ Jericho: One (use of the existing municipal garage)
- ✧ Middle JSC: One (new garage)

b) Service Offices

The facilities currently possessed by the local authorities shall be used. Two offices will be set up at the following locations to ensure an efficient service.

- ✧ Jericho: One (use of the existing municipal office on the same premises as the garage mentioned above)
- ✧ Middle JSC: One (existing office of Middle JSC)

c) Repair Workshop

Maintenance/repair work shall be outsourced to the existing repair workshop in Jericho Municipality.

d) Landfill Sites

² A technical committee will be established to evaluate the vehicles. Some or all the vehicles will be transferred to JC. Concerning garages, vehicle will be kept as it is at the beginning.

For the immediate future, four (4) existing landfill sites (Jericho, Al-Ojah, Tuburan and Tubas) will be used.

e) Introduction of New Landfill Site

Preparatory work should be conducted with a view to opening a new landfill site in 2010.

(3) Budget and Source of Funds

Budget and source of funds (i.e. contribution of local authorities, charges to beneficiaries, tipping fees, charges for business waste, etc.) shall be examined and determined.

(4) Recruitment of JCspd Staffs

See Attached Paper 1

(5) Establishment of the Management Rules and Regulations

See Attached Paper2: Functions required to the sections.

The regulations for SW collection regarding the beneficiary's charges and other relevant matters shall be examined and determined.

4. Property and Initial Funds

(1) Ownership of Property

- ✧ The offices and garages shall be transferred to JCspd.
- ✧ The vehicles and the heavy equipment shall be transferred to JCspd.
- ✧ The landfill sites shall be transferred to JCspd.
- ✧ The workshop shall continue to be owned by the Jericho municipality

(2) Source of Initial Funds

Initial funds to cover the operation cost in the initial stages of 2007 are essential for smooth start of SWM services. The funds shall be contributed by the local authorities. The contribution share of each local authority shall be examined and determined.

5. Comprehensive SWM in the Area

Comprehensive SWM activities in the area shall be covered entirely by three responsible parties; i.e. 1) JCspd, 2) local authorities, and 3) joint activities of both parties. This decision shall be made by the parties concerned.

SWM Activities	Responsible Parties		
	JCspd	Local Authority	Joint
Preparation of SWM Plan	O		
Collection and transportation of SW	O		
Disposal of SW	O		
Guidance for private service providers	O		
Public relations and enlightenment campaign			O
Collection of the SWM service charge		O	
Cleaning of roads and parks		O	

- ✓ Private waste collection organizations and private waste collectors which are currently operating in the JCspd area will not be affected by the establishment of the JCspd in the immediate future to respect historical practices and their vested interests.
- ✓ In regard to business waste and industrial waste, the producers of waste are, in principle, required to dispose of their own waste.

6. Employment Status of JCspd Staffs

The employment status of JCspd staffs shall be examined and determined.

ANNEX-3 SWM Plan of Year 2007

SWM Plan of FY 2007 (SWM Plan) is an essential concept of JCspd for SWM operation of year 2007. So it is discussed here again although it is already explained in the Basic Plan. The SWM Plan is consist of 4 items of 1) target waste, 2) service area, 3) service type, and 4) facilities. The SWM Plan is discussed and approved by AB meeting held on 3rd of August.

(1) Target Waste

JCspd will deal with only domestic and commercial/institutional waste in year 2007 as shown in Table 1. Hospital waste should be a responsibility for MoH. However, agriculture waste and night soil (sewerage) will be studied and discussed in 2007 whether, when and how JCspd deals with it.

Table 1 Target Waste of JCspd for Year 2007

Category	Generation (ton)	Service area	Collection and transportation	Disposal
Domestic waste	50	All target area	JCspd	Dumping on Landfill site
Commercial waste	5	Jericho	JCspd	Dumping to Landfill site
Agriculture waste		To be studied		
Hospital waste	0.1	Hospitals , Clinics	Ministry of Health	---
Night soil (sewerage)	40-50	---	Private person, with charges of collection	Dumping to Landfill site (tentatively)

Source: Basic Plan of JCspd prepared by CP and JICA Expert Team

(2) Service Area

JCspd will cover all area of 17 LAs as shown in Table 2. JCspd will collect 6 times a week in Jericho; however, twice a week in other LAs. This is decided by considering generation amount of waste of each LA, number of transportation vehicles that JCspd has or will have, location of containers, cost effectiveness, etc. The collection frequency for each LA will be reconsidered in year 2008 after one year experience of 2007.

Table 2 Service Area and Frequency of JCspd for Year 2007

Collection Area(in localities)	Collection Frequency	Disposal site
Jericho and the Refugee camps	Jericho	6 times/week
	Refugee camps	Twice/week
Auja, Duke, Nwemeh, Fasayel	Duke, Nwemeh,	Twice/week
	Auja, Fasayel	Twice/week
Middle JRRV	East side	Twice/week
	West site	Twice/week
Bardala, Kardala, Ein Beda	Twice/week	

Note: Use of disposal site will be changed when new disposal site will be constructed.

Source: Basic Plan of JCspd prepared by CP and JICA Expert Team

(3) Service Type

JCspd will provide the secondary collection and dumping services in year 2007 as shown in Table 3. It should be noted that JCspd will start its operation with minimum number of staff so that JCspd will neither do the primary collection nor the street/park cleaning in the starting year of 2007.

At present, Jericho is only municipality that provides the primary collection and the street/park cleaning. So, the possibility of such service provision by JCspd will be studied after the year of 2007.

Table 3 Service Type of JCspd for Year 2007

Areas	Primary collection	Secondary collection	Dumping	Street and Park
Jericho Municipality	×	○	○	×
Other LAs	×	○	○	×

Note: 1)○: by JCspd, ×: not by JCspd, 2) Primary collection means collection from house to container.
Secondary collection means transportation from container to dump site.

Source: Basic Plan of JCspd prepared by CP and JICA Expert Team

(4) Facilities necessary for JCspd

JCspd will use 4 disposal sites as shown in Table 4 in year 2007. JCspd will contract with Jericho Municipality on usage of work shop for repair of vehicles/equipment. Offices and garages will be prepared respectively both in Jericho and middle/north area.

Table 4 Facilities necessary for JCspd

Facility	Place name	Remarks
Final Disposal Site	Jericho	To cover soil
	Al Ojah	To cover soil
	Tovlan	To pay dumping fee
	Tubas (Jenin)	To pay dumping fee
Transfer station	Tubas	—
Work Shop	Jericho	To contract with Jericho Municipality
Office	Jericho	To be rent or other preparation
	Middle and North	To be prepared
Garage	Jericho	In work shop
	Middle and North	—

Source: Basic Plan of JCspd prepared by CP and JICA Expert Team

(5) Arrangement of Vehicles and Equipment

The number of vehicles and equipment that LAs currently own is presented in Table 5. These vehicles and heavy equipment will be transferred to JCspd until the start-up date of JCspd operation.

Table 5 Vehicles and Heavy Equipment

Items	Location	Type	Capacity	Number	
1. Vehicle	Jericho	Compactor	8 m ³	2	
		Container Carrier	4 m ³	1	
			8 m ³	2	
	Total				5
	Al-Oja	Compactor	5 m ³	1	
	M JRV	Compactor	5 m ³	1	
Bardalla	Compactor	5 m ³	1		
Total				8	
2. Heavy Equipment	Jericho	Truck Loader	120 PS	1	
3. Container	Jericho		1.1 m ³	137	
			4.0 m ³	24	
			8.0 – 12.0 m ³	52	
Total				213	

Source: CP and JICA Expert Team

(6) Organization Structure and Number of Staff

The organization structure and number of staff is discussed in the AB meetings and decided as presented in Figure 1 for year of 2007. JCspd will run the SWM services with 24 staff.

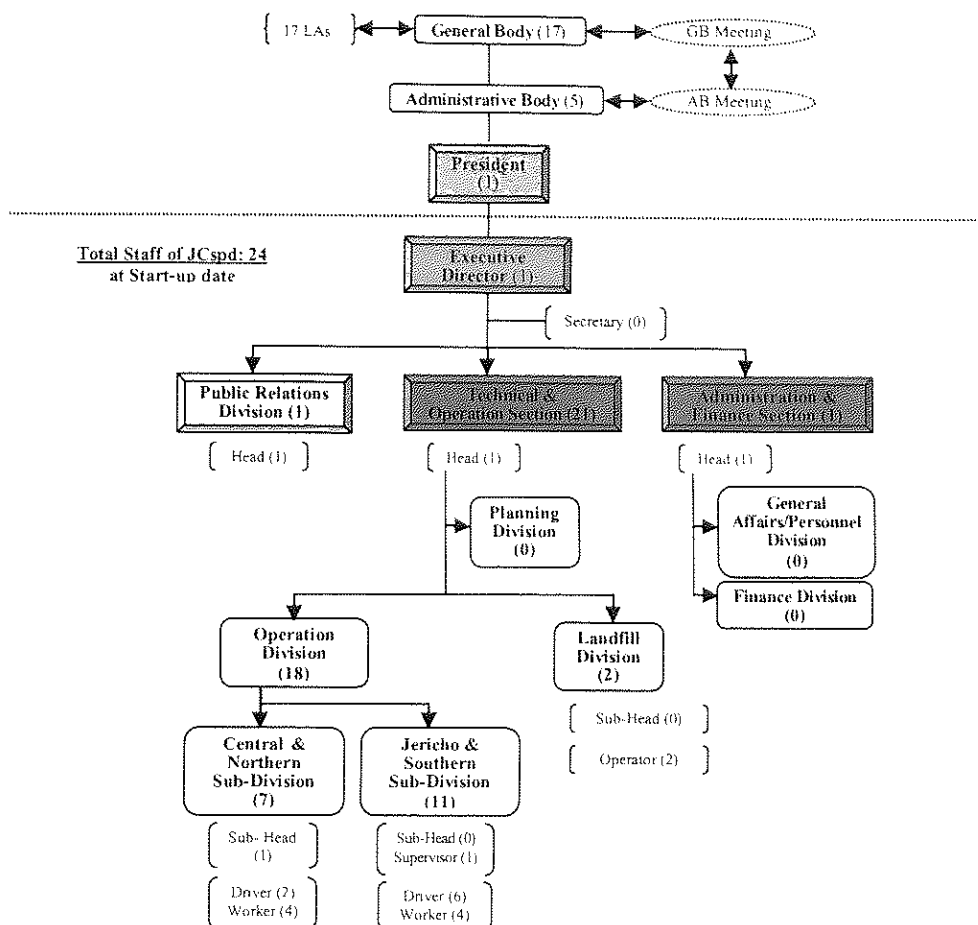


Figure 1 Organization Structure of JCspd

(7) Budget for FY 2007

The budget for FY 2007 was decided in the AB meeting held on October 12, 2006 as summarized in Table 6.

The charges of each LA have been discussed in the AB meetings, and were discussed also in the GB meeting on October 16, 2006.

The cost of JCspd is estimated at *NIS 1.7 million* as presented in Table 4.6 by considering all cost items to be generated from the JCspd operation in FY 2007. As a result, unit cost per ton can be calculated at *110 NIS/ton*. Depreciation does not cash disbursement, but has to be retained especially for future renewal of vehicles and equipment.

Table 6 Budget of FY 2007 (thousands of NIS)

Revenues	Charges to LAs	1,713	17 LAs
Expenses	1) Salaries and Wages	546	24 staff
	2) Fuel	345	Working days, trips, distance, gas mileage of vehicles, etc
	3) Tipping Charges	92	Charges of Tovlan and Tubas landfill site
	4) Repair & Maintenance	170	
	5) Office	54	Office rent, electricity, etc
	6) Procurement	100	Desk and chairs, file box, telephone

			& facsimile, etc
	7) Depreciation	406	10 years of economic life time
	Total	1,713	= 110 NIS/ton

Source: CP and JICA Expert team

(8) Charges to LAs

The above cost must be fully paid by the members of JCpsd according to the "Basic Regulations of JCspd No. (1) of 2006, Local Authorities Law of 1997, PNA". The basic concept of charges is discussed and decided as bellow in the AB meeting on 12th October 2006;

< Basic Concept of Charges >

Items	FY 2007	FY 2008 afterwards	Remarks
1. Collection of Charges			
JCspd collects from LAs			Article 15, 37 and 50 Note: JCspd supposedly will collect charges direct from household in small LAs.
2. Calculation Base of Charges			
1) Operation Cost	To be calculated	To be calculated	
2) Depreciation Cost	To be calculated	To be calculated	Inevitable for Renewal of vehicles and equipment
3. Charging Items			
1) Households	Unit base: Family	Unit base: Family	
2) Commercial & Others	To continue current charges	Charges to be re-considered	
3) Terminal Bridge	To be considered		
4. Time of Charge Collection			
	Every 3 months in advance	Every 3 months in advance	
5. Additional Funds			
1) Loan	To be studied if necessary	To be studied if necessary	Necessity of prior Gov. approval: Article 40
2) Donation/grants	To be studied	To be studied	Necessity of prior Gov. approval: Article 39

Note: Articles 15, 37 and 50; Basic Regulations of JCspd No. (1) of 2006, Local Authorities Law of 1997, PNA

ANNEX 4 SWM Plan for Year 2008

The Annual Plan for Year 2008 (herein after referred to as "the Plan") is an essential concept of the JCspd for SWM operations in 2008. The Plan was discussed among the JCspd staff and the JICA Expert Team in September 2007 and drafted, and will be also discussed in the AB meeting. The Plan consists of 4 items: 1) SWM Plan, 2) Construction and Procurement Plan, 3) Training Plan and 4) Public Relations Plan.

(1) Target Waste

The JCspd deals with only domestic and commercial/institutional waste in 2008, as shown in Table 2.5. However, medical waste and night soil (sewage) is received at Jericho dumping site temporarily. Agricultural waste will be studied and discussed in 2008 as to whether, when and how the JCspd should deal with it.

Table 2.5 Target Waste of JCspd for 2008

Category	Generation (ton)	Service Area	Collection and Transportation	Disposal
1. Domestic waste	50/day	17 LAs	JCspd	Dumping at disposal site
2. Commercial waste	5/day	Jericho	JCspd	Dumping at disposal site
3. Agriculture waste	1,200/year	To be studied in 2008		
4. Medical waste	0.1	Hospitals and Clinics	Ministry of Health (Temporarily by the JCspd)	Dumping at disposal site (Temporarily)
5. Night soil (sewage)	260/day	Jericho	Private entity	Dumping at disposal site (Temporarily)

Source: JCspd

(2) Service Area

The JCspd covers all areas of the 17 LAs, as shown in Table 2.6. The collection frequency for each LA will be reconsidered in 2008 after delivery of new vehicles to be donated by UNDP.

Table 2.6 Service Area and Frequency of JCspd for 2008

Collection Area(in localities)	Collection Frequency	Disposal site
1. Jericho and the refugee camps	Jericho	6 times/week
	Refugee camps	Twice/week
2. Al-Ojah, Duke, New'meh & Edyuk, Fasayel	New'meh & Eduke, Al-Ojah, Fasayel	Twice/week
		Twice/week
3. Middle JRRV	East side	Twice/week
	West side	Twice/week
4. Bardalah, Kardalah, Ein Al-Bedah	Twice/week	

Source: JCspd

(3) Service Type

The JCspd will provide secondary collection and dumping services in 2008 as shown in Table 2.7.

At present, Jericho is the only municipality that provides a primary collection service and street/park cleaning, so the possibility of such service provision by the JCspd will be studied in 2008.

Table 2.7 Service Type of JCspd for 2008

Areas	Primary collection	Secondary collection	Dumping	Street and Park
Jericho Municipality	×	○	○	×
Other LAs	×	○	○	×

Note: 1)○: by JCspd, ×: not by JCspd, 2) Primary collection means collection from house to container.

Secondary collection means transportation from container to dumping site.
Source: JCspd

(4) Facilities

Table 2.8 presents the facilities that the JCspd continuously uses for providing the SWM services in 2008.

Table 2.8 Facilities Necessary for JCspd

Facility	Place name	Remarks
1. Final Disposal Site	Jericho	Completion of extension work in February
	Al-Ojah	To be closed after delivery of new equipment
	Tovlan	To pay dumping fee
2. Transfer station	Tubas	To pay dumping fee
3. Work Shop	Jericho	Agreement with Jericho Municipality
4. Office	Jericho	Rent
	Beit Hassan	Complementary from Middle JRRV
5. Garage	Jericho	Jericho workshop
	Beit Hassan	Aqrabanyyah station

Source: JCspd

(5) Vehicles and Equipment

The number of vehicles and equipment that the LAs currently own is presented in Table 2.9. These vehicles and heavy equipment have to be transferred to the JCspd. Some vehicles might not be used anymore after delivery of new vehicles to be donated by UNDP.

Table 2.9 Vehicle and Heavy Equipment

Items	Location	Type	Capacity	Number	
1. Vehicle	Jericho	Compactor	8 m ³	2	
		Container Carrier	4 m ³	1	
			8 m ³	3	
	Total				6
	Al-Ojah	Compactor	5 m ³	1	
	Beit Hassan	Compactor	5 m ³	2	
Total				9	
2. Heavy Equipment	Jericho	Truck Loader	120 PS	1	
3. Container	Jericho		1.1 m ³	137	
			4.0 m ³	24	
			8.0 – 12.0 m ³	52	
	Total				213

Source: JCspd

(6) Working Time

The working days a year and working time of worker are as follows:

- Working days : Staff and workers : 310 days/year
- Working time : Collection : 6:00am-12:00am : morning shift
- (Driver & Worker) : 8:00pm-1:00am : night shift
- : Disposal Site : 24 hours : 3 shifts

(7) Construction and Procurement Plan

1) Vehicles and Equipment

Table 2.10 shows the list of vehicles and equipment to be donated through Grant Aid Project of UNDP. The containers are to be delivered in late October: however, the vehicles and

equipment are not sure when they would be delivered. The JCspd plans the delivery date to be in June or July 2008 in formulating Year 2008 budget.

Table 2.10 Vehicles and Equipment List to be donated by UNDP

Type of Equipment	Description of Size	Unit
< Vehicles >		
1. Compactor truck A	12 m ³	3
2. Compactor truck B	8 m ^e	1
3. Container truck	8 - 12 m ³	1
4. Dump truck	13 ton	1
Total		6
< Containers >		
1. Large Container	8-12 m ³	10
2. Small Container	1 m ³	310
Total		320
< Heavy Equipment >		
1. Backhoe loader	1 m ³	1

Source: JCspd

2) Disposal Site

Jericho disposal site was decided to be expanded. After extension, the disposal area will increase from 2,500 m² to 7,800 m²; disposal capacity from 7,000 m³ to 46,000m³, and duration of disposal from 0.5 year to 3.5 years.

(8) Training Plan

Aiming to improve technical skills of workers and prevent from accidents, the following training courses are planned in 2008. Especially, operation training for new equipment will be carried out before and/or after delivery from UNDP.

< Training >	< Frequency >	< Target >
1. Safety and sanitation	: Quarterly	: Workers
2. Workers training and site visit	: Quarterly	: Workers
3. New equipment training	: At the time of delivery	: Staff and workers

(4) Public Relations Plan

PR Plan of Year 2008 is set up as follows aiming at continuously raising public awareness and cooperation.

< Items >	< Contents of PRs >	< Target >
1. Waste Reduction Campaign	: Clean city contest : Segregation of waste at source	: 17 LAs and two Refugee camps
2. Community Meeting	: Dialogue with community members about the JCspd services	: 17 LAs and two refugee camps
3. Environmental Education	: Teaching and Presentation	: Schools and summer camps
4. News Letter/Leaflet/Booklet	: -	: To be issued 4 times/year
5. Site visit	: Tour to the places related to SWM	: To be conducted 2 times/year

JCspd for SWM in JJRRV



Annual Report

2008

Preface

Dear, Ladies and Gentlemen:

After two years of starting the service of SWM through JCspd in JJRRV, this council wish to gather all Local Authorities in JRRV area under one umbrella, to embody the real mean of partnership by skipping the administration division boarders, and other military, social and cultural boarders. This council today need your continuous support and affiliation to your areas so the service could continue and develop.

Here we put your hands in the second annual report, and we thank you for supporting JCspds, which could not succeed unless with your cooperation. Local Authorities insist to continue the development process, despite all difficulties and blocks facing since the start. And we need to note the special mention for the Local Authorities who have paid all their contributions since last year.

Also we should mention the important rule of our Japanese partners, who provide full support to the Council, and join all the steps from its beginning, through the project of capacity development for SWM in JJRRV.

Finally we hope the cooperation will continue, to reach overall sustainable development. Also we hope to publish the next annual report under free and independence Palestine with Jerusalem as Capital.

President of JCspd JJRRV

Annual Report 2008

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Chapter I: Introduction about JCspd

A. Establishment of JCspd

JCspd for SWM in JJRRV is an organization created to respond to the needs of community service in an economical effective way according to the internal regulations of JCspds for the year 1998 and the modified regulations of JCspds for the year 2003 and the amended rule for the year 2006.

The formation of JCspd for SWM in JJRRV was announced tentatively on July 6th, 2005, based on the agreement signed between the Palestinian National Authority represented by Ministries of Local Government and Planning and the Japanese Government represented by the Japan International Cooperation (JICA). The Council includes 17 members representing the General Body of the Council. On August 6th, 2005, an election has been held for the President and his deputy. Other members of the Administrative Body that counted five members were elected on September 11th, 2005.

The second Administration Body was elected in March 24th, 2008..

B. JCspd Vision

Upgrading and development for the achievement of joint service council for planning and development lead for a sustainable development in the Jordan River Rift Valley in various sectors of service, development, and infrastructure.

C. JCspd Message

In order to provide good service for SWM at a regional level orderly, effectively with affordable price, JCspds aims to ensure the continued provision of the service in the long term and to raise public awareness and active participation in this area with the commitment to the laws and regulations in force in Palestine, based on scientific evidences to maintain the environment, public health and promoting a self-administration by building the scientific and technical capabilities of the local authorities.

D. Internal Rules

In February 2006 the internal rules of JCspd was established by the approval of all members of the Administrative Body (AB) and submitted to the Minister of Local Government for approval.

According that MoLG amended the system of JCspds and it was issued in June 2006, there was a need to amend the internal rules in order to suit the modified basic bylaw of 2006. In August 2006, the preparation of the modified internal rules of JCspd was finished by the approval of the AB and submitting it to the Minister of Local Government for approval. Finally the internal rules were approved in October 2006.

E. JCspd Members

JCspd includes 17 local authorities from 3 governorates as follows:

- Nablus Governorate: 6 LAs include: Froosh Beit Dajan, Ein Shibli, Nawaji, Beit Hassan, Al-Nassaryyah, and Al-Aqrabanyya.
- Jericho Governorate: 8 LAs include: Jericho, Al-New'meh & Edyuk Al-Foqa, Al-Ojah, Fasayel, Al-Jiftlik, Marj Na'jeh, Marj Al-Ghazal, and Zbidat.
- Tubas Governorate: 3 LAs include: Ein Al-Bidah, Kardalah, and Bardalah

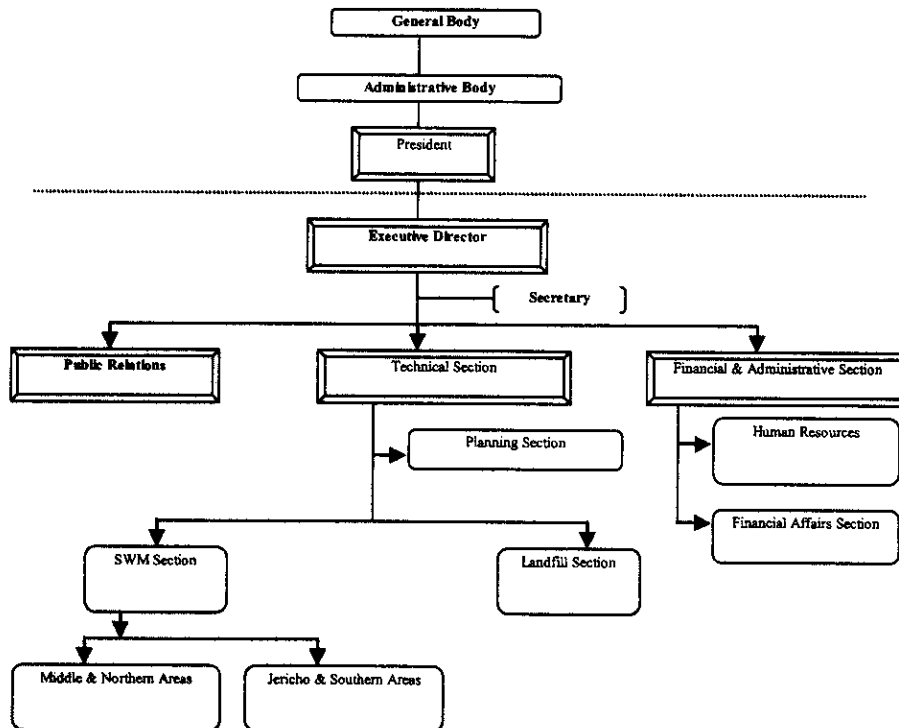
F. Work Areas of JCspd

JCspd works for the local authority members in the Council.

G. JCspd Facilities

1. Offices: JCspd has 2 offices, the main office is located in the town of Jericho and a branch office is located in the village of Beit Hassan in the Central JRRV.
2. Landfills: JCspd has 2 landfills under the direct responsibility; the first one is in the town of Jericho and the second one is in the village of Ojah. JCspd also is using a transfer station in the Tubas city within an agreement with JCspd - Jenin.
3. Maintenance Workshop: JCspd uses the maintenance workshop of the municipality of Jericho according to an agreement between the JCspd and Jericho Municipality.

H. JCspd Structure



Chapter II: Overview of the project of Capacity Development

Based on the request of the Palestinian National Authority to the Japanese Government, a project was planned to develop the capacity in SWM in some governorates of the country. Then Japanese team conducted a study to establish a project to meet the request. As a result, the Project for the capacity development in SWM in JJRRV was approved. In July 2005, an agreement on this Project was signed between the Palestinian National Authority represented by the Ministry of Local Government and the Japanese government represented by the Japan International Cooperation Agency (JICA). Since November 13th, 2005, Japanese Experts have been dispatched to implement this Project.

A. Objectives of the Project

The objectives of the Project are as follows:

- 1) Develop a permanent health system to serve SWM to JJRRV.
- 2) Transfer expertise and knowledge of the service of SWM system in JJRRV as a model for the rest of the Palestinian areas

B. Project Duration

The period of this Project was set for three years starting from July 2005 until August 2008 at first. And it was extended for another one year and half based on the result of the Evaluation Team. So the Project will end in March 2010.

C. Project activities

The Outline of the Project's activities can be summarized as follows:

- 1) Establish a monitoring and controlling system of the Project (Joint Coordinating Committee)
- 2) Institutional building of a permanent body to serve SWM (Joint Services Council)
- 3) Identify the problems of the current SWM service
- 4) Develop the action plan to solve problems
- 5) Apply the action plan to improve the service system of SWM
- 6) Hold seminars / workshops to disseminate the improved SWM service
- 7) Learn basic knowledge on the integrated SWM

D. Project activities implemented in the year 2008

The activities during the year 2008 are as following:

- 1) Strengthen the institution of JCspd through the transfer of technology, expertise, training, and others
- 2) Improve the final disposal site, where the existed landfill was rehabilitated and the additional part was newly constructed
The total area of the site is seven thousands and eight hundred square meters (7.8 dunum). Also the operation manual of the site and a special film holding the title "Operation Manual in Jericho dumping site" were produced.
- 3) Raise community awareness among all segments of society on the subject of SWM and its importance in preserving the environment, the public health and sustainable development

Chapter III: Administrative Report

As we pointed out in the first chapter of this report, the first 5 AB members were elected in August and September of 2005, and the second AB members were elected in March 24th, 2008, consisting of lawyer Hassan Saleh JCspd president/ Mayor of Jericho, Vice-President, President of the Council/ head of Zbidat village Mr. Hassan Jeremy, the Secretary Deputy of Ojah LA, Mr. Turkey Eshibat, , and two others were Deputy of Aqrabanya Mr. Ibrahim Da'abes, and the head of the village of Ein Beda Mr. Anwar Foqaha. Its worth to mention that the election is held once every two years

With the start of the project in late 2005, the Joint Coordinating Committee of the Project was formed, which includes: the Ministry of Local Government, Ministry of Planning, Ministry of Health, Environment Quality Authority, the governorate, local government departments (Jericho, Tubas and Nablus), JCspd head, Executive Director, and any other parties invited as needed. And the JCC held periodical meetings to follow the Project activities and to confirm the yearly plans of the project.

A. Administrative Body Meetings

AB meeting held four times in the year of 2008 as follow:

- On June 18th, this meeting reviewed the activities of the last stage of the Project about capacity building, the last developments regard financial issue and necessary polices to collect the accumulated benefits. Other topics were the equipments from the UNDP and the money transfers from the Palestinian Authority.
- On July 26th, this meeting discussed the latest developments on capacity building project and the vehicles and equipments, in addition to the financial situation in the council.
- On October 27th, this meeting discussed the suggested budget of 2009 and the latest updates regarding the council financial situation.
- On November 9th, this meeting discussed the budget of 2009 to approve and to send it to the General Body for final approval.

B. General Body Meetings

The General Body (GB) meetings held three times in the year of 2008, as follow:

- On March 16th, the meeting was held at the hall of Jericho municipality to discuss about financial situation, to specify a date for the second elections for AB members as March 24th, to notice that the election should have been in this meeting but it was postponed because the attendance are less than the regulated number.
- On March 24th, the meeting was held at the hall of Jericho municipality to discuss about both financial situation and yearly report of 2007. At this meeting, the second election was held for the AB members. Mr. Hassan Saleh as JCspd president/ Mayor of Jericho, Vice-President, President of the Council/ head of Zbidat village Mr. Hassan Jeremy, the Secretary Deputy of Ojah LA, Mr. Turkey Eshibat, and Deputy of Aqrabanya Mr. Ibrahim Da'abes, and the head of the village of Ein Beda Mr. Anwar Foqaha were elected.
- On November 19th, the meeting was held at the hall of Jericho municipality to discuss and to approve the yearly budget of 2009 and the financial outstanding for the last two years.

C. Joint Coordination Committee (JCC) Meetings

The JCC meeting held three times in the year of 2008, as follow:

- The eighth JCC meeting was held in the Jericho Resort Village in Jericho on March 13th. It reviewed the achievements of the Project for the last period and the pilot project "Jericho without containers". Also it reviewed the service that the council offered, the financial problems, the LA members' weakness, the result of the pilot project of agricultural waste recycling. In addition to other reviews, SWM development in Palestine, the plan of vehicles and equipments, and the latest developments on constructing landfill for north area in Bethlehem and Hebron were discussed. Also it discussed the issue of transferring and exchanging the experiences, and extending the capacity building project in JJRRV.
- The ninth JCC meeting was held in the JICA office in Jericho city on June 22nd and 23rd. It reviewed and discussed about the final evaluation report for the Project, signing the Minutes of Meeting of the evaluation meeting.
- The tenth JCC meeting was held in Jericho Resort Valley on August 7th. The committee members discussed the latest issues, such as the financial and technical situation in the council, the procedures to improve the financial situation and the council continuer. Other issues were about extending the duration of the Project and changes of the Project design. And during the meeting, they signed the Minutes of Meeting of extending the Project and all other changes.

D. Staff

The JCspd started with 19 employees, including the administration staff, drivers and workers. And in 2007 starting to use the landfill, two new guards were hired, so the actual number reached 21 employees according to the structure mentioned above.

In 2008 another two workers were hired, one was a guard for Jericho landfill and another was a driver, so the number of employee reached 23.

It should be noted that both AB and GB approved the required number of employee in the year 2009.

E. Training Courses

Within the council policy and plan to raise the employees' capacities, ten workers participated in training courses in 2008 as follow:

- Head of administration and finance section (Manal Romanin): training course in purchases management and evaluating the assets, for 15 hours in training centre in Jericho.
- Charge of the head of administration and finance section (Manar Fityani): training course in the basic of human resource development, for 15 hours in training centre in Jericho.
- Head of technical section: training course in preparing budgets, for 15 hours in Jericho training centre.
- Head of waste management division (Waleed Moghrabi): training courses in planning and organizing the work and time management, and in safety and sanitation and first aids, for 15 and 45 hours respectively.
- The driver (Naser Rjoob) : training course in safety and sanitation and first aids, for 45 hours

- The guard (Omar Saeadeh): training course in safety and sanitation and first aids, for 45 hours

F. Safety and Sanitation Committee:

The safety and sanitation committee (which was formed in 2007 headed by the executive director) held three meetings at JCspd office in February, July and October in 2008, discussing the issue of work accidents, health insurance, safety clothes, safety procedures and other issues related to workers safety in the council. The executive director attended all meetings.

Chapter IV: Financial Report:

A. 2008 budget:

Since the late 2007, JCspd had studied about a budget expected in 2008 and costs for the service that JCspd would provide according to the Basic Plan, which was adopted by the administrative and general bodies of the Council. The following is a summary of the budget in 2008:

Budget of JCspd JJRRV in 2008

2008 Budget			2008
Incomes	From LAs	Waste Fees	1,545,140
		Tender Fees	4,000
	From Palestinian Authority	Authority Income	70,000
	Total		1,619,140
Expenses	Salaries	Administrative Staff	231,568
		Technical Staff	427,734
		Total	659,302
	Fuel Landfill Site fees	Waste Collection	218,823
		Tubas	33,483
	Periodical Maintenance	Collection and landfill equipments	222,001
	Office Rent	Jericho Office	19,200
	Other Expenses	Insurance, license, office expenses	60,331
	Depreciation	Waste collection equipments	406,000
		Total		1,619,140
Balance			0

B. Waste fees

The service fees have been identified based on the studies carried out in 2006 on the expected costs of SWM service in Jericho and the JRRV. A monthly fee to every family in rural areas is as follows:

- 1) Single family: 15 shekels a month.
- 2) Complex family: 25 shekels a month.
- 3) For the city of Jericho, the current system was maintained, where to be studied in future.

These fees were adopted for the year 2008.

C. Fees revenue and contributions of LAs

Total income and collected fees in the year 2008 was 1250437.72 shekels in which 85% was owed by the local authorities. The collection rate of Jericho City was 91%, and that of rural areas reached 52%. The following table shows the total revenue in the year of 2008.

Service revenues in 2008 (All income are fees and contributions)

Incomes for 2008	Percen-
------------------	---------

L.A		Contributions 2006	Contributions 2007	Contributions 2008	Total	Percentage for 2008
1	Jericho	0.00	0.00	1,099,349.78	1,099,349.78	91%
2	Al-New'meh & Edyuk Al-Foqa	0.00	7,967.94	18,648.00	26,615.94	39%
3	Al-Ojah	0.00	0.00	28,107.00	28,107.00	40%
4	Fasayel	0.00	0.00	8,530.00	8,530.00	45%
5	Al-Jiftlik	0.00	0.00	2,340.00	2,340.00	33%
6	Zbidat	0.00	0.00	6,305.00	6,305.00	31%
7	Marj Al-Ghazal	0.00	0.00	3,735.00	3,735.00	88%
8	Marj Na'jeh	0.00	0.00	5,375.00	5,375.00	27%
9	Ein Al-Bidah *	2,364.50	135.5	0.00	2,500.00	-
10	Kardalah*	0.00	1,000.00	0.00	1,000.00	-
11	Bardalah *	2,500.00	0.00	0.00	2,500.00	-
12	Froosh Beit Dajan*	0.00	0.00	0.00	0.00	-
13	Ein Shibli	0.00	3,360.00	5,760.00	9,120.00	100%
14	Nawaji	0.00	0.00	1,740.00	1,740.00	100%
15	Beit Hassan	0.00	2,280.00	18,540.00	20,820.00	100%
16	Al-Nassaryyah	0.00	0.00	18,000.00	18,000.00	80%
17	Al-Aqrabanyya	0.00	0.00	14,400.00	14,400.00	100%
	Subtotal	4,864.50	14,743.44	131,480.00	151,087.90	52%
	Total	4,864.50	14,743.44	1,230,829.78	1,250,438.00	85%

Comment: 4 Las (*) the service were stopped in 2008.

D. Expenses

The total expense for the year of 2008 was 1,020,030 shekels including salaries and expenses of operating vehicles, maintenance, licensing, insurance, landfill and office operation, and miscellaneous expenses. The following table shows summary on these expenses.

Operating expenses in 2008

Item	Centre	Middle	Total	
Salaries	482,942.23	54,000.00	536,942.23	
Fuel	266,137.55	39,881.00	306,018.55	
Rent of Heavy Equip.	141,885.00	0.00	141,885.00	
Repair & Maintenance	Vehicles Maintenance	185,443.00	18,756.00	204,199.00
	Washing & Greasing	18,000.00	0.00	18,000.00
	Container Maintenance	19,704.00	0.00	19,704.00
	Subtotal	223,147.00	18,756.00	241,903.00
Landfill Maintenance	8,251.00	0.00	8,251.00	
Landfill Fees	0.00	10,000.00	10,000.00	
Licensing & Insurance Office Expenses	Vehicles Insurance	36,077.00	3,508.00	39,585.00
	Electricity	6,888.00	0.00	6,888.00
	Telephone	8,936.00	0.00	8,936.00
	Office Rent	18,060.00	0.00	18,060.00
	Stationary	2,000.00	0.00	2,000.00
	Miscellaneous	7,356.00	0.00	7,356.00
	Subtotal	43,239.00	0.00	43,239.00
Total	1,201,784.21	126,076.00	1,327,824.21	

D. JICA contributions and other income:

JICA total contribution and other income were 1,477,240 shekels in the year 2008. The following table shows the summary of these contributions and income:

Imports from other activities

Item		Amount (NIS)	Remarks	
Donations	JICA	Improvement of Jericho Landfill Site	711,872.02	Jan. 2008
		Connecting electricity to landfill	34,200.00	February 2008
		Building garage & fence in landfill	70,194.05	March 2008
		Importing small car	49,165.84	March 2008
		Vehicles Spare parts	24,710.00	It was donated in 2006, and used in 2008
		Supply line for recycling plastic	54,000.00	February 2008
		Raising the electricity power	3,691.00	October 2008
		Building for plastic recycle	56,412.49	June 2008
		Workers cloth	2,700.00	December 2008
		Maintaining the recycling line	13,441.00	November 2008
		Copy machine	882.50	March 2008
		Total	1,021,268.91	
	UNDP	404,391.56	Bagger and Containers	
Incomes from Palestinian Authority		48,480.00		
Tenders Fees & others		3,100.00		
Total		1,477,240.41		

F. 2009 budget:

As from September 2008, the preparation for the budget of 2009 was started. The budget was approved by the administrative and general bodies of the Council in November 2008. The following is a summary of the budget of 2009:

Budget of JCspd JJRRV in 2009

Incomes	Amount (NIS)	Remarks
Service Fees	1,518,740	Total service fees charged on L.A
Tender Prices	0	
Incomes through the authority	100,000	This amount was specified by MoF to SWM service
Total	1,618,740	
Expenses		
Salaries	656,490	Attached details regard salaries
Fuel	243,676	
Maintenance	42,053	
Office expenses	42,053	
Expenses	244,091	Includes insurances, licences, office expenses and beverages.
Landfills fees	24,000	Fees to be paid to Jenin council instead of using Tubas station
Destroying the Vehicles & equipments	199,030	Destroying rate to the council vehicles & equipments
Total	1,618,740	

CHAPTER V: Technical Report

A. Solid Waste Collection Plan

Within the Action Plan of 2008, the Council continues to adopt to be responsible for secondary collection from containers and transportation to the final disposal. The primary collection and sweep the streets and public places are on the responsibility of local authorities.

Similarly, the council is responsible for the management of municipal waste only and has nothing to do with construction wastes, high volume wastes and hazardous waste although the council collects the medical waste from the big canthers in Jericho city.

B. Final Disposal Plan

The Council uses two landfill sites and one evacuating station in 2008. Among them, Jericho landfill site deals with the wastes from the city of Jericho, Edyuk & New'meh and Aqabat Jabber & Ein Sultan refugee camps. Ojah Landfill site deals with the wastes from the villages of Ojah & Fasayel. And Tubas evacuating station is operated to transfer wastes to Zahrat Al-fingan landfill in Jenin.

C. Waste Collection Programs

According to the Action Plan of 2008, the Council collects the wastes for six days a week in the city of Jericho. It collects for two days a week in rural communities and three days in Aqabat Jabber & Ein Sultan refugee camps. The following table shows the waste collection days of each area.

signs on it. After the completion of the required maintenance, the chief of maintenance section completes the form indicating the nature of the fault, the pieces used for maintenance and any comments or recommendations on the reasons of failure.

F. Current Landfills Sites

In 2008, the Council used two major disposal sites and one evacuating station in Tubas. these sites are as follows.

- Jericho landfill site for the city of Jericho, Edyuk & New'meh and Aqabat Jabber & Ein Sultan refugee camps.
- Ojah Landfill site for the villages of Ojah & Fasayel.
- Tubas Evacuating Station for the village of North & Middle area then to Zahrat Al-fingan landfill in Jenin.

G. Operating System of Jericho landfill site

After completion of the second phase of Jericho sanitary landfill, there was an urgent need to develop the special system for the operation, maintenance and preservation of the landfill. For this purpose, the booklet about the landfill has been updated, containing methods of follow-up, reception of waste at the site, maintenance, oversight and control of the entry and exit. It also includes a daily follow-up system for all the works in the landfill, an emergency system as fire. Also the Project produced a special film regarding operation system in Jericho landfill site.

H. Medical waste collection and disposal

Because of the absence of a system and a special department for medical waste, it was an urgent need for medical waste collection and disposal to minimize the effects on public health. Even though it is out of the business of JCspd, the Council raised a temporal system to deal with medical waste, whereby the Council shall collect medical waste from Jericho Hospital, the Directorate of Health, the Red Crescent, Medical Relief, Al-Islah healthcare center, and other clinics which have committed themselves to the collection program developed by JCspd. These medical wastes are collected twice a month and disposed in special cells established for this purpose in Jericho dumping site. 3,705 kg of medical wastes were collected and dumped in special cells of Jericho landfill site.

I. Slaughterhouse waste

Slaughterhouse waste is one of the hazardous wastes that can not be combined with other wastes. Although such wastes are out of the business of JCspd, JCspd compelled to deal with this waste. Special place has been identified in the dumping site of Jericho for the disposal of such waste until the proper solution is established to this problem. This waste is collected on a daily basis and buried at the dumping site in an allocated place. 15,448 kg were collected and dumped in 2008.

J. Service Requests / Complaints

Technical Section received approximately 25 service requests, complaints and observations concerning the collection and distribution of containers. To response to them, JCspd clarified and took quick actions.

CHAPTER VI: Public Relations

A. Public Relations Plan

Public Relations plan was made to raise the level of awareness in all segments of society, and networking with other institutions. A series of activities has been made which included community meetings, newsletters, publications, films, competitions, educational trips, volunteer work, workshops and celebrations.

B. Community Meetings:

Within the plan of public relations in 2008, 31 community meetings were held including all segments of the community, LA, women, farmers, students and other organizations in the area.

C. Newsletters & Leaflets:

During the year of 2008, 2 newsletters were issued about the most important activity of the Council. Also, 4 leaflets were published about Jericho dumping site, home compost, my bag campaign and 3R. Also three booklets were published on medical wastes, solid waste management for children and annual report of 2007.

And five posters were issued on my bag campaign, Jericho landfill, medical wastes, the council working area with introduction about Jericho dumping site, and our rights and duties.

D. Films

Three films were issued as the documentary film entitled "Year of starting the service", in addition to two TV announcements in 2008. This film documents deals with the Council's work since its foundation. The other films were "Jericho landfill operation" and educational film regarding 3R.

Two announcements were broadcasted on TV over all the country regarding the necessity of SWM and the importance of paying fees to continue the service.

E. Awareness campaigns

To strengthen the role of the citizen in the process of SWM systems, the council organized campaign entitled "My bag which aimed to reduce the use of plastic bags and use cloth bags instead of paper bag".

F. Educational Trips

To educate citizens about the importance of SWM, the Council has organized educational trips to Jericho landfill, Zahrat Al-fingan landfill and Al-sairafi for waste separation in Nablus.

G. Ceremonies

During the year 2008, the council organized a ceremony for one year after starting the service and starting the new stage of developing Jericho dumping site.

H. Media coverage

Through the public relation activities, the Council made coordination with media at the council meetings and activities. Those activities were covered in different local newspapers and through internet news agencies and other local television stations as 35 times during the year 2008.

CHAPTER VII: Studies

A. studying the citizens willing to pay

During the year 2008, the Project of capacity development for SWM in Jericho and the Jordan River Rift Valley conducted a study on the acceptability of the citizens to pay for the service. This study showed that 84% of the chosen samples agreed to pay the monthly fees as 15 shekels per month. 66% committed to pay the fee and 34% did not pay for this service. The study also showed that 88% of citizens who did not pay were willing to pay the price for the service. And 20% of citizens had not been informed that there were charges on waste management and 7% did not have enough information on the importance of paying the fees.

Chapter VIII: Projects and Pilot Projects

A. Draft of Machinery and Equipment Projects

The equipment and vehicle project is submitted by the Japanese Government through UNDP for JCspds' SWM in Jericho, Bethlehem, Tulkarem, and Salfit. The project aims to provide vehicles and equipment to the four JCspds for SWM. JCspd of Jericho has already been provided the vehicles and equipment and other JCspds will be provided at the end of 2009 as shown in the table below.

No.	Description	Quantity	Remarks
	Compactor 12m3	3	Jericho City
	Compactor 8m3	1	Middle JRRV
	Container crane	1	Jericho City
	Containers 1.1 m3	234	All LAs
	Containers 8 m3	8	Jericho City
	Tipcart 13 tons	1	Landfill Site
	Bulldozer 1 m3	1	Landfill Site

B. Improvement of Jericho Landfill Site Project

It has been finishing working on the second phase of improvement Jericho landfill site in February 2008, as 7 dunums were developed with capacity of 46,000 cope.

The development process included the construction of a large platform of ground for waste, geo-membrane protection liner, leachate and gas networks, leachate pond, control room, fence, planting trees, a special cells for medical waste, and the garage for the vehicles working in the landfill site.

It is expected that the landfill will serve for Jericho city, Newemeh and Duke, Aqbat Jaber and Ein Al-sultan refugee camp for the next three and half years. It should be noted that this development is as a temporary solution for the problem as the lack of disposal site until a permanent solution will be established.

C. Pilot Project for the Recycling the Agricultural Plastic Waste

In February 2008, a pilot project was held for the recycling of agricultural plastic waste. The quantity of recycled plastic and the possibility of selling were examined. In this pilot project, the private sectors were involved in implementing this project.

Because of the lack of quantity that has been collected and its nature, it was not possible to sale a large amount of recycled plastics. In order to take more data, it was decided to repeat the trial.

It should be noted that the Project implemented that the electricity was connected and the special machines were maintained at the landfill site. It will be tested again during the year of 2009.

CHAPTER IX: Other Activities

A. Membership in Working Groups:

Because JCspds play the specific role in SWM in JJRRV, three working groups become key roles at the level of policy-making nationally.

Working Group I: development of training strategy in SWM sector, supported by the German Agency for Technical Cooperation GTZ.

Working Group II: development of the strategy of JCspds, supported by the Japanese International Cooperation Agency JICA.

Working group III: preparation of a national strategy for SWM in Palestine

In addition to the follow-up committee, the technical committee follows the Project of importing the vehicles and machines in order to transfer and exchange the experience among JCspds.

B. External Meetings and Workshops

During the year 2008, JCspd participated in 61 meetings on multiple topics related to SWM projects, such as preparing strategies, transferring and exchanging experiences, environment, and coordination with related local and international institutions.

ANNEX 6 Job Descriptions of the JCspd / Jericho – JRRV

(1) Head of Technical Section

Job Name:	Head of Technical Section	Job Number:	
Responsible Authority:	Executive Director	Administrative Referential	Executive Director
Version No.	(1/07)	Issue Date	16/1/2007

Main Responsibilities	Basic Activities
1. Preparing plans and budgets	<ul style="list-style-type: none"> To Prepare, implement, and follow up the annual plan of the Technical Section. To Prepare the annual budget of the Technical Section
2. To Follow up the maintenance of vehicles And equipments	<ul style="list-style-type: none"> To follow up the maintenance of vehicles and equipments of JCspd according to the signed agreement. To guarantee the availability of spare parts. To follow up the periodical maintenance programs for the vehicles and equipments of JCspd. To prepare periodical reports concerning maintenance and submitting it to the Executive Director. To present recommendations & suggestions regarding the situation of the equipments, vehicles and maintenance requirements.
3. to follow up licensing & insurance of vehicles & equipments	<ul style="list-style-type: none"> To follow up the licensing of vehicles & equipments of JCspd according to the official procedures. To follow up the insurance of the vehicles and tenders concerning it. To prepare periodical reports about the licensing and insurance of vehicles and equipments then submit it to the Executive Director
4. Supervision on the variant	<ul style="list-style-type: none"> To follow up the execution of plans and work programs concerning solid waste management section in the northern and southern areas. To follow up the execution of plans and work programs concerning landfill management section. To do a check visit to assure the running of work according to the programs and schedules. To follow up any complains concerning SWM service in the working areas of JCspd. To follow up the development plans and treatment process of SWM according to the agreements with the donors of the project
5. developing the work of the section	<ul style="list-style-type: none"> To present suggestions concerning the development of the work. To evaluate the performance of the section supervisors, then handing it to the Executive Director for approval. To determine the training needs of the employees and submit it to the Executive Director in order to approve it in the annual training plan. To participate in preparing and developing sections personnel plan. To prepare periodical reports concerning the events and activities of the section and submit it to the Executive Director. To do any further works requested from him by his supervisor within the rang of his work.

(2) SWM section Supervisor

Job Name:	SWM section Supervisor	Job Number:	
Responsible Authority:	Head of Technical Dept.	Administrative Referential	Technical Department
Version No.	(1/07)	Issue Date	16/1/2007

Main Responsibilities	Basic Activities
1. To do maintenance to the containers and distributing it regularly in the working areas of the JCspd	<ul style="list-style-type: none"> • To supervise the distribution of containers to guarantee the regularity of waste collecting. • To follow up the containers maintenance periodically, in order to guarantee the suitability of all containers. • To participate with the technical department head in putting a collection plan for solid waste from all the areas of JCspd.
2. supervising and follow up the work in his section	<ul style="list-style-type: none"> • To follow up waste collecting in the southern, middle and northern, to assure that it is working properly. • To check the disposal process in the landfills of JCspd is running according to the plans and programs. • To check that the disposal process of waste in the landfills not referring to JCspd is going according to the programs and plans. • To make a patrol round to check cleanness and collection of the containers as well as the cleanness of the area around it. • To prepare periodical and urgent reports to the technical department head. • To evaluate the employees and workers inside his section.
3. Maintenance of waste vehicle	<ul style="list-style-type: none"> • To follow up the maintenance of JCspd vehicles. • To prepare maintenance reports and lists and submitting it to the department head. • To be sure that the drivers are doing the daily check for the vehicles.
4. Other Responsibilities	<ul style="list-style-type: none"> • To follow up service request offered from the citizens and organizations. • To follow up any complains concerning SWM service. • Any other responsibilities given to him by his supervisor.

(3) Northern and Middle Area Supervisor

Job Name:	Northern and Middle Area Supervisor	Job Number:	
Responsible Authority:	Supervisor of SWM section	Administrative Referential	SWM Department
Version No.	(1/07)	Issue Date	16/1/2007

Main Responsibilities	Basic Activities
1. Monitoring work process in the section	<ul style="list-style-type: none"> To monitor the drivers and labors commitment in taking the containers and returning it back on the specific time. To verify the emptiness of the containers after their restore. To verify the restore of the containers to their locations. To coordinate through his supervisor about adding new containers or the usage of the container by other parties. To follow up the disposal of solid waste in tubas & the Israeli landfills. To do any additional works within his responsibilities assigned to him by his supervisor. To evaluate the employees referring to him.
2. Writing reports concerning the work	<ul style="list-style-type: none"> To prepare daily and periodical reports about the work process in his area. To present suggestions and recommendations concerning the improvement and development of the work.

(4) Southern Area Supervisor

Job Name:	Southern Area Supervisor	Job Number:	
Responsible Authority:	Supervisor of SWM section	Administrative Referential	SWM Department
Version No.	(1/07)	Issue Date	16/1/2007

Main Responsibilities	Basic Activities
1. Monitoring work process in the section	<ul style="list-style-type: none"> To monitor the drivers and labors commitment in taking the containers and returning it back on the specific time. To verify the emptiness of the containers after their restore. To verify the restore of the containers to their locations. To coordinate through his supervisor about adding new containers or the usage of the container by other parties. To follow up the disposal of solid waste in Jericho & Ojah landfills. To do any additional works within his responsibilities assigned to him by his supervisor. To evaluate the employees referring to him.
2. writing reports concerning the work	<ul style="list-style-type: none"> To prepare daily and periodical reports about the work process in his area. To present suggestions and recommendations concerning the improvement and development of the work.

(5) Sweeper

Job Name:	Sweeper	Job Number:	
Responsible Authority:	Supervisor of SWM section	Administrative Referential	Technical Department
Version No.	(1/07)	Issue Date	16/1/2007

Main Responsibilities	Basic Activities
1. Cleaning Waste Containers	<ul style="list-style-type: none"> To collect waste from containers. To collect waste from places that doesn't have any containers. To remove the waste around the containers. To clean the containers according to the supervisor orders. To inform about any problems or containers needs maintenance.
2. Other Responsibilities	<ul style="list-style-type: none"> To collect the waste urgently according to the supervisor instructions. To do any other works within his area of work that is given to him from his supervisor.

(6) Secretary

Job Name:	Secretary	Job Number:	
Responsible Authority:	Executive Director	Administrative Referential	Executive Director
Version No.	(1/07)	Issue Date	16/1/2007

Main Responsibilities	Basic Activities
1. Secretary Procedures	<ul style="list-style-type: none"> To prepare and organize the meetings and Executive Director Schedule. To prepare JCspd meetings agenda. To type and write reports and correspondence. To receive and transfer telephone calls. To send, receive and follow-up correspondence through fax
1. Typing Contracts & Agreements	<ul style="list-style-type: none"> To enter data concerning contracts and agreements on computer. To type contracts and agreements.
2. Archiving Procedures	<ul style="list-style-type: none"> To receive the post of JCspd and file it. To distribute the post after the executive director comments on it to the concerned persons. To Archive JCspd incoming and outgoing post according to the used filing system.

(7) Head of Administrative and Financial Department

Job Name:	Head of Administrative and Financial Department	Job Number:	
Responsible Authority:	Executive Director	Administrative Referential	Executive Director
Version No.	(1/07)	Issue Date	14/1/2007

Main Responsibilities	Basic Activities
1. To Prepare Plans and Budgets	<ul style="list-style-type: none"> • To prepare assignment and training plans. • To prepare programs and needs for the execution of these plans. • To prepare and follow-up the annual budget of the administrative and financial department. • To participate in the preparation of the capital and operative budgets of the other sections. • To follow-up preparing the budget according to MoLG requirements in the specific time. • To expend and receive according to the budget items. • To participate in the preparation of JCspd annual budget with the executive director.
2. to organize and follow-up employees files	<ul style="list-style-type: none"> • To prepare a file for every employee containing the official approved documents. • To update the employee file regularly. • To file, keep, and update the training certificates of the employees. • To follow up with the resignations of the employees and inform the executive director about it. • To follow up transfer/ dismiss of the employees and showing it in their records. • To follow up with the employees development like training period and scientific certificates. • To follow up with the employees fastening, or part time, or work contracts, or seconding.
3. To follow up employees working hours	<ul style="list-style-type: none"> • To monitor the working hour list. • To monitor leaves. • To monitor regular and urgent vacations. • To prepare annual vacations list. • To follow up the overtimes
4. Evaluation	<ul style="list-style-type: none"> • To implement JCspd evaluation system. • To pose suggestions for the development of the evaluation system. • To write the evaluation report.
5. Health Insurance	<ul style="list-style-type: none"> • To fill up the clinic form. This is given to the employee when he is transferred to MoH medical center. • To prepare a list with the insured and uninsured employees. • To follow up with the technical Department for issuing or canceling medical insurance for the employee.
6.employees Assignment	<ul style="list-style-type: none"> • To follow up with the implementation of employment procedures through(Newspapers advertisements and interview committee) • To follow up with employment applications. • To open a new file for every new employee and counseling him. • To hand the assignment letter to the new employee and keep a copy in his file.
7. Pension	<ul style="list-style-type: none"> • To implement the pension system. • To follow up the records of the retired employees guaranteeing the reception of their money without any

Main Responsibilities	Basic Activities
	delay. <ul style="list-style-type: none"> • To follow the recent developments occurred on the pensioners. • To follow up the pensioners family situation after his death. • To follow up in solving pensioners problems.
8. Improving The Department	<ul style="list-style-type: none"> • To give suggestions regarding the department and handing it to the Executive Director. • To participate in preparation and implementation of the strategic and statistical studies concerning the department duties. • To coordinate with other related parties. • To evaluate the performance of the department employees then submitting it to the Executive Director for approval. • To determine training needs for the employees of the department then submitting it to the director for approval. • To prepare the periodical and urgent reports concerning the department then submitting it to the executive director.
9. Supervising Expenditure and Receiving	<ul style="list-style-type: none"> • To monitor money collection and checks. • To follow up and check expenditure process. • To monitor the registration and posting. • To check and sign the daily journal. • Closing books and balance at the end of the year.
10. Tenders & Purchase	<ul style="list-style-type: none"> • To follow up purchase process of JCspd. • To participate in the tenders committee. • To participate in putting the financial conditions of tenders and check its fulfillment.
11. Donations & Financed Projects	<ul style="list-style-type: none"> • To open a file for the project or donation • To follow up the expenses and vouchers concerning the project. • To follow up the checks coming from the donated countries. • To prepare periodical financial report on every project
12. Other Responsibilities	<ul style="list-style-type: none"> • To prepare the needed studies and reports. • To evaluate the employees. • To give suggestions concerning the development of the department. • To coordinate with other departments and sections. • To do any other works within his area of responsibility that his supervisor ask him to do.

(8) Executive Director

Job Name:	Executive Director	Job Number:	
Responsible Authority:	President of JCspd	Administrative Referential	President of JCspd
Version No.	(1/07)	Issue Date	1/1/2007

Main Responsibilities	Basic Activities
1. Strategic & Operational Planning	<ul style="list-style-type: none"> • To participate in the preparation of the strategic plans of JCspd. • To implement the strategic plan of JCspd. • To evaluate the strategic plan of JCspd. • To connect the annual operational plans of the departments with the strategic plan. • To follow up the annual plan of the departments of JCspd. • To evaluate the annual plan of the departments of JCspd. • To follow up the general budget of JCspd.
2. Training & Development	<ul style="list-style-type: none"> • To revise and evaluate the annual plan of assignment. • To revise and evaluate the annual training plan of JCspd employees. • To follow up the execution of the training plan. • To follow up the training courses of JCspd employees.
3. Citizen Needs & Desires	<ul style="list-style-type: none"> • To make studies to determine the needs of the citizens from services and projects in the working area of JCspd. • To make meetings with the organizations and citizens. • To follow up community meetings and workshops with the citizens and local organizations. • To monitor and follow up the complains of the citizens
4. To Implement Rules And Regulations in addition to the Administrative Body Decisions	<ul style="list-style-type: none"> • To follow up the implementation of the financial laws and regulations. • To follow up the implementation of the Administrative laws and regulations. • To follow up the implementation of JCspd Administrative Body decisions. • To implement the regulations and rules concerning purchase and tenders. • To follow up the expenses and reducing it. • To implement the rules and regulations concerning the assignment and interviewing committee. • To follow up the implementation of rules and regulations concerning salaries, promotions, punishments and deductions. • To issue the administrative memos
5. Developing & Improving the Services	<ul style="list-style-type: none"> • To follow up the level of provided services. • Periodical evaluation to the services of JCspd. • Sustainable development and improvement for the services of JCspd. • To follow up the implementation of suggestions presented from the employees and citizens.
6. To Solve the Administrative Problems	<ul style="list-style-type: none"> • To solve and follow up the internal administrative problems. • To follow up in solving the problems between the departments and citizens, contractors, suppliers and organizations. • To hold periodical meetings with heads of departments.
7. Newsletters & External Correspondence	<ul style="list-style-type: none"> • To follow up and audit the newsletters and booklets issued

Main Responsibilities	Basic Activities
	by JCspd. <ul style="list-style-type: none"> • To follow up with the departments external correspondence. • To contact and coordinate with the external organizations.
8. Other Responsibilities	<ul style="list-style-type: none"> • To offer suggestions to the administrative body concerning the improvement and development of JCspd work. • To prepare the periodical and urgent reports regarding JCspd work. • To evaluate head departments work. • To do any additional works requested by his manager within the range of work.

Note: Job descriptions of Public Relation and Driver will be prepared.

D:\James Docs\14Jan2007\JCspd\JCspd Job Description.doc

ANNEX 7

PRESENTATIONS OF SECOND WORKSHOP ON OCTOBER 17, 2007

Title of presentation

- | | | |
|----------|---|-------------|
| 1 | Strengthening of Organization and Institution | A-44 |
| | Mr. Abdel-Jabbar Al-Halawa, Director of JCspd | |
| 2 | 1. Improvement of Collection and Transportation System | A-47 |
| | 2. Improvement of Disposal System | |
| | 3. Improvement of Maintenance System | |
| | Mr. Sultan Roma, Chief of Operation Section, JCspd | |
| 3 | Raising Public Awareness | A-56 |
| | Mr. Marwan, Chief of Public Relations, JCspd | |
| 4 | Establishment of Financial Management System | A-66 |
| | Ms. Manal Romaneen, Financial Chief of JCspd | |
| 5 | Development of New System for Medical Waste Management | A-70 |
| | Mr. Abdel-Jabbar Al-Halawa, Director of JCspd | |

Achievements at Strengthening JCspd

Prepared By
Abdul Jabbar Abu Halawa
JCspd Executive Director

1

Preparing the Organizational Structure of JCspd

The Activities Till now are as the following:

1. Preparing the needs of JCspd in the year 2006
2. Determining the employment needs for JCspd.
3. Preparing Job Descriptions.
4. Building JCspd organization by putting laws and regulations that organizes its work.
5. Assigning the suitable staff according to jcspd organizational structure.
6. JCspd organizational structure assessment , and its suitability to achieve the needs of te council work.

1

1. JCspd Structure and Staff

1. At the end of the last year preparation of JCspd organizational structure and staff has been achieved

2. JCspd structure consist as the following:

- General Body
- Administrative Body
- Executive Director
- Technical Section
- Administrative & Financial Section
- Public Relation Section

3. No. of Staff: 23 employee and worker, 21 of them has been assigned.

4. Training for the staff through workshops.

3

2. Preparation of Vehicles and Equipments for Work

- Vehicles and Equipments property transfer from LAs to JCspd.
- Necessary Licensing for the vehicles and equipments has been done.
- Doing the necessary maiteance for the vehicles, and signing 2 agreements one ia for using the municipality maintenance workshop and the other is regarding using Jericho landfill site.
- Vehicles work programs has been assigned for all the 17 local authorities.
- Startrt of service since the beginning of this year 2007.

4

3. Collection and Transport

In order that JCspd to provide the best service for JRRV inhabitants, it did the following:

- 1 Putting an intergrated system for the collection and transport process in the 17 members LAs.
- 2 Specifying days and times for the collection process and informing the LAs about it.
- 3 Making a booklet about the action plan, and distributing it on the concerned organizations.
- 4 Preparing control system on the service quality.

5

4. Landfill Sites

- Enhancements on Jericho landfill site has been done and finished on 21/3/2007, and started working in it at the beginning of April 2007.
- An agreement has been signed with Jenin JCspd so as to use Tubas landfill site for the middle and northern JRRV areas.
- An agreement with Ojah LA to use Ojah Landfill site temporarily for Ojah and Fasayel area.

6

5. Service Fees

- The Rural congregations fees has been approved as the following
 - One Family: 15 NIS/Month
 - Compound family: 25 NIS/Month
- A list of beneficiary family from the service has been prepared.
- For Jericho City, it has its own fees collection system, and it will be used until modification.

7

6. Financial System

- During the first seven months of this year a Microsoft Excel financial database prepared by JICA Expert Team has been used.
- At the end of July a new computerized financial system "AL Assel" has been introduced.
- In addition to the above items we are still using the ledger book.
- A training on the new system has been held for the concerned person from JCspd and Jericho Municipality.

8

7. Community Awareness

For the community role in giving success and strengthening JCspd, we have concentrated on community awareness which includes:

- Community Meetings
- Issuing Leaflets and Newsletters.
- Issuing Booklets
- Issuing and Translating Films
- Making Competitions.
- Supporting Voluntary Works
- Public Relations with the local community organizations

9

Problems & Obstacles

It is not going that easy. JCspd has faced many obstacles as the following:

- No satisfactory cooperation with some of the Local Authorities, also no cooperation from the beneficiary citizens which resulted in stopping the service from such areas.
- The provided data about family numbers is not accurate, which led to income reduction.
- No fulfillment from the LAs to pay their fees & contributions, even they promised and committed in giving success to JCspd.
- The administrative and financial weakness in many LAs which make it difficult to JCspd to do it work.
- No financial support fro PNA to JCspd .
- The raise of the operational cost as a result of the spread of the service area, and low density inhabited area, in addition to the rising of maintenance cost because of the oldness of the equipments.

10

Recommendations

In order that JCspd continue to provide a regular service the following has to be done:

- commitment from the LAs and the beneficiaries on paying their financial dues.
- Financial support from PNA in order to strengthen the work of JCspds
- To rapid the provision of vehicles and containers which are necessary for the service, where it was to reach JCspd within this period.
- Guaranteeing the financial and administrative independence of JCspd

11

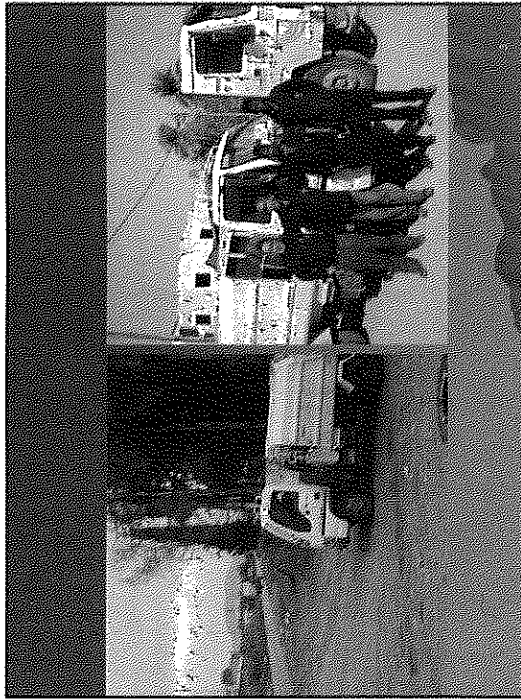
THANK YOU

12

- ◆ Goals & Activities that have been achieved till this stage

Technical Section

Sultan Roma



◆ Enhancement of Collection & Transport System

- ◆ The collection system in Jericho and the 16 LAs was unorganized, and each LA had its own collection system. Jericho since long time had its own system where it was collecting 6 days a week and 2 days for the refugee camps. This system is done by 2 ways:
 - ◆ Primary Collection: workers collect from houses to the containers
 - ◆ Secondary Collection: vehicles collect the containers to the landfill site
- ◆ The collection in Qjeh and Edyuk & Iwe'ameh was 2 days a week but it was not organized.
- ◆ After the start of service special programs has been assigned for the collection process, so the collection process became 5 days a week in Jericho and each LA get 2 days of collection and each area of the 16 LAs get 2 days a week. Special programs has been specified for each area, as well as for the vehicles and the drivers.

معلومات عامة عن البرنامج

المنطقة	عدد الحاويات	عدد السيارات	عدد السائقين	عدد العمال	عدد المراكز	عدد السكان	عدد اللاجئين	عدد النازحين	عدد المزارعين	عدد الصناع	عدد التجار	عدد المعلمين	عدد الأطباء	عدد المحامين	عدد الصحفيين	عدد الفنانين	عدد المثقفين	عدد الشباب	عدد النساء	عدد الأطفال	عدد كبار السن	عدد ذوي الإحتياجات الخاصة	عدد ذوي الدخل المنخفض	عدد ذوي الدخل المتوسط	عدد ذوي الدخل المرتفع
المنطقة الأولى	10	5	5	10	5	1000	500	500	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
المنطقة الثانية	15	7	7	15	7	1500	750	750	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
المنطقة الثالثة	20	10	10	20	10	2000	1000	1000	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
المنطقة الرابعة	25	12	12	25	12	2500	1250	1250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
المنطقة الخامسة	30	15	15	30	15	3000	1500	1500	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
المنطقة السادسة	35	17	17	35	17	3500	1750	1750	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350
المنطقة السابعة	40	20	20	40	20	4000	2000	2000	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
المنطقة الثامنة	45	22	22	45	22	4500	2250	2250	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450
المنطقة التاسعة	50	25	25	50	25	5000	2500	2500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
المنطقة العاشرة	55	27	27	55	27	5500	2750	2750	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550
المنطقة الحادية عشر	60	30	30	60	30	6000	3000	3000	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
المنطقة الثانية عشر	65	32	32	65	32	6500	3250	3250	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650
المنطقة الثالثة عشر	70	35	35	70	35	7000	3500	3500	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
المنطقة الرابعة عشر	75	37	37	75	37	7500	3750	3750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
المنطقة الخامسة عشر	80	40	40	80	40	8000	4000	4000	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
المنطقة السادسة عشر	85	42	42	85	42	8500	4250	4250	850	850	850	850	850	850	850	850	850	850	850	850	850	850	850	850	850
المنطقة السابعة عشر	90	45	45	90	45	9000	4500	4500	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
المنطقة الثامنة عشر	95	47	47	95	47	9500	4750	4750	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950
المنطقة التاسعة عشر	100	50	50	100	50	10000	5000	5000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

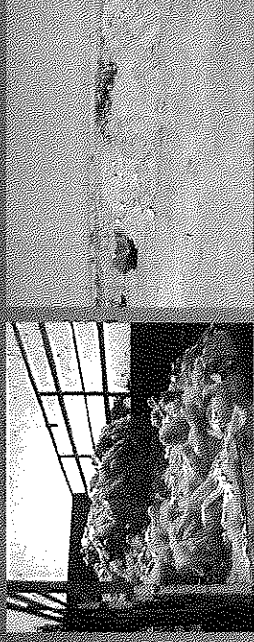
The service in the 17 local Authorities:

- ◆ Regarding the service programs before January 2007 just Jericho and the near villages had a program. In the other 16 LAs there were a random collection by tractor and random disposing of wastes.
- ◆ Now, after the start of service each of the 16 LAs get 2 days of collection. There is a daily monitor on the service in all the areas by the supervisor of each area. Also, there are records registering the collection process, daily reports, and produced waste amount in each area.



Plastic Waste:

JCspd started a trial study on plastic waste collection from Jericho, Edyuk & New ameh, and Ojah. There will be another trial for plastic waste collection on March 2008 as a continue to the previous one, and we will work on giving success to it



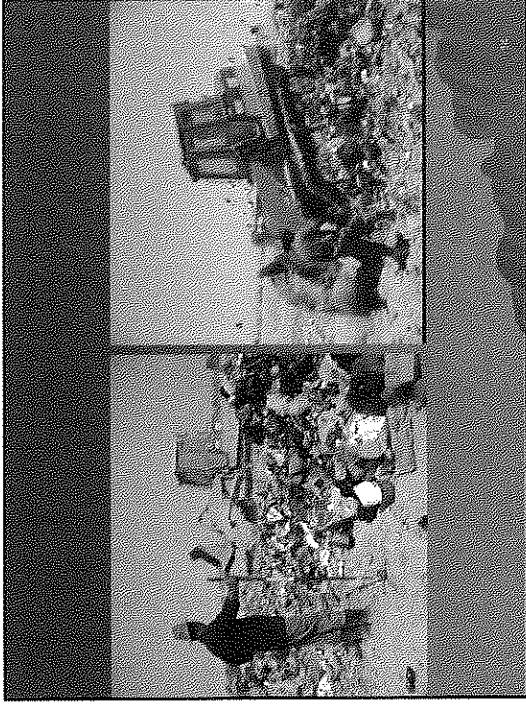
A Geographical Map for the service in the 17 LAs

- ◆ In order to improve the service, we are working on putting a geographical map containing the ways of the vehicles inside the service area, and the needs of each LA of containers depending on the village size, population number, and waste produced amount which will specify the number of containers to be put in each village.
- ◆ By preparing the map, it will facilitate vehicles monitoring and containers distribution in the LAs when we receive them

◆ Presenting the Main Topics

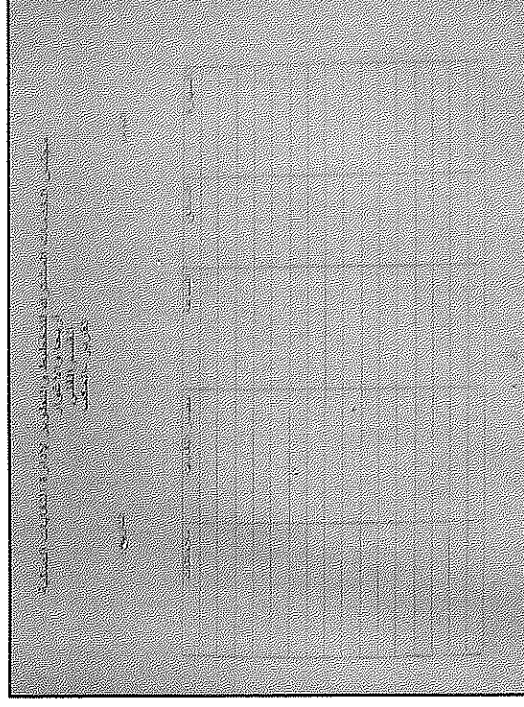
Improving Disposal Process in the Landfill Site

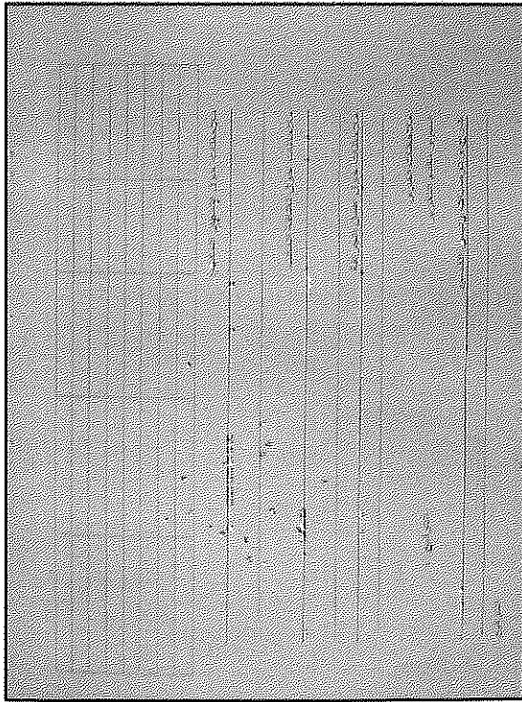
- ◆ There were no disposal system in the landfill site before the start of JCspd, so it was in a bad situation and there were no monitoring on the produced waste amount and the disposal place. In addition to that there were a lot of random disposal sites in the villages varies between disposing in front of the villages, outside it, and in front of the houses.
- ◆ Today and after the start of JCspd there is a system that assures a sanitary disposal in specified landfills, where Jericho dumping site considered as a sanitary landfill after enhancing it, which receives the wastes from Jericho, refugee camps, and Bayruk & New amieh. The disposal process is done by compacting the waste size by the bulldozer and finally covering it by a soil layer.
- ◆ Jericho landfill site has been opened as a sanitary landfill in 22/3/2007, where it receives an average of 35-40 tons per day.



Mechanism of Receiving waste in the Landfill Site

- ◆ The receiving process is done as the following:
- ◆ The landfill worker registers the following:
 - each vehicle enters the site.
 - Type of waste that the vehicle holds.
 - Source of the waste.
 - Putting remarks about the area it came from (tourist area, factory, slaughterhouse, or other areas)
- ◆ Then the worker will direct the vehicle toward the discharging area.
- ◆ Also, Jericho landfill site receives wastewater vehicles that comes from Jericho, where it discharge in a specified area in the site. It receives about 30 vehicles a day.





Received Amount of Waste
the received amount from 1/1/2007 is as the following:

	Monthly	Daily
January	1511.5	50.0
February	864.4	28.8
March	1110.2	37.0
April	1117.0	37.5
May	1079.5	35.0
June	889.6	39.0
July	995.2	33.0
August	885.8	29.0
September	918.1	30.6
Total	9371.3	Average of 35.5

Jericho Landfill Site

- ◆ The landfill was in a bad situation, fire and smoke, so this required an enhancement on the landfill in order to keep the public health and environment.
- ◆ In the Non-aerobic decomposition methane gas and water are produced and the decomposition is too slow which produce a big amount of leachate.
- ◆ The landfill enhancement based on the semi aerobic decomposition method, where the organics decomposition produce heat in the waste layers that produce leachate that will flow through leachate pipes to the leachate pond, and the methane gas flow through the gas venting pipes to the air.
- ◆ Standing of Mr. Saito & Mr. Ineguchi from JICA Expert team gave us new experience and knowledge about this method.



The importance of Soil Covering

- ◆ In the sanitary landfill sites soil covering is important in order to keep the surrounding environment. It will prevent bad odors, waste scattering, insects production, and prevent the occurrence of any fire. In addition it will give the area a good look.
- ◆ From scientific point of view soil covering prevents rainwater from leaking into the internal layers of waste and reduces the produced amount of leachate.

Daily soil Covering

- ◆ When waste layer reaches to such thickness according to scientific criteria, and after finishing the compaction process, this waste has to be covered.

Aims from Daily Covering

- ◆ Prevents waste scattering
- ◆ Prevents bad odors.
- ◆ Stops insects production.

Final Covering

- ◆ When completely finishing the work in the landfill site, we have to make a final covering with soil for all the landfill site.

Goals of Final Covering

- ◆ Gives the place a good view.
- ◆ To consolidate the good usage of soil.
- ◆ To reduce waste amount.

Final Covering

- ◆ The final covering has to be strong in order to prevent the leakage of rainwater into the internal layers of waste.

Thickness Determination

- ◆ soil thickness has to be determined according to the usage purpose and type of the waste as well.
- ◆ Daily covering with soil has to be by Natural soil, 20cm.

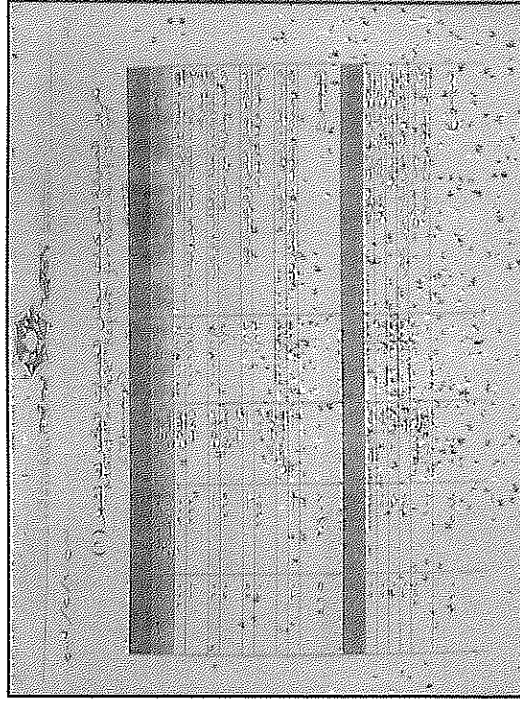
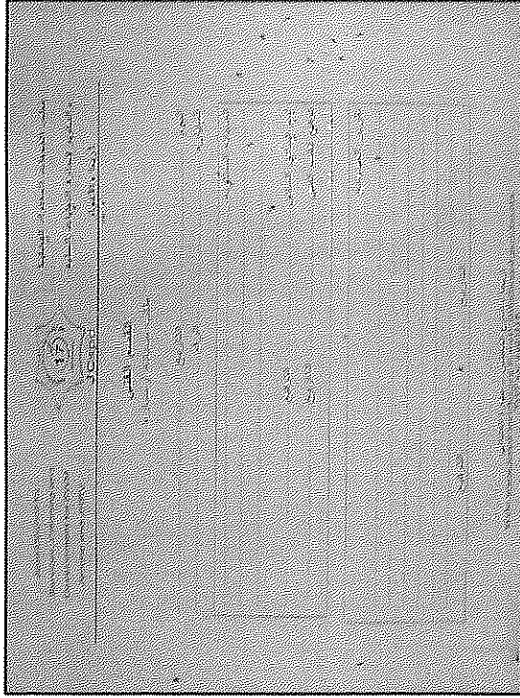
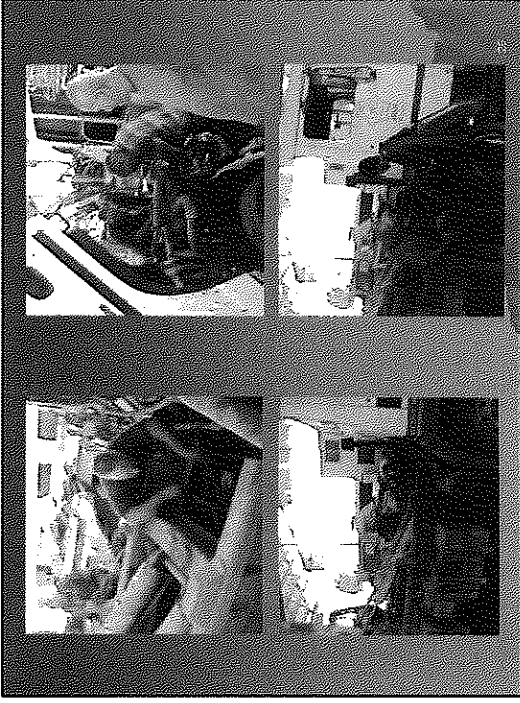
Final covering with soil:

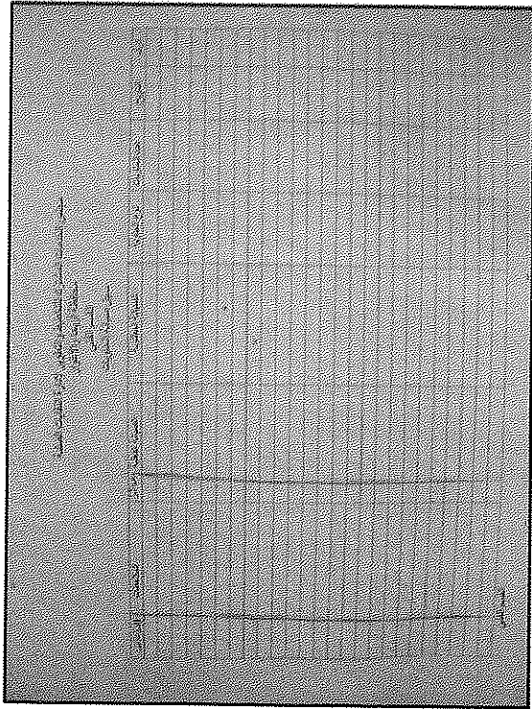
- ◆ Planting small trees or herbs, or bushes, more than 50 cm,
- ◆ Average height of soil : more than 1 meter.

◆ What will be achieved in the next stage

Enhancement of Maintenance System

- ◆ Before the establishment of JCspd there were no specific system for the maintenance process.
- ◆ After the start of service and JCspd, the maintenance process became organized and all the vehicles and equipments of JCspd are repaired in Jericho municipality workshop. If an error happened in the vehicle, the driver will inform the section supervisor or head, then the supervisor or technical head will request for repair.
- ◆ There is a maintenance workshop in Beit Hassan for the northern area vehicle.



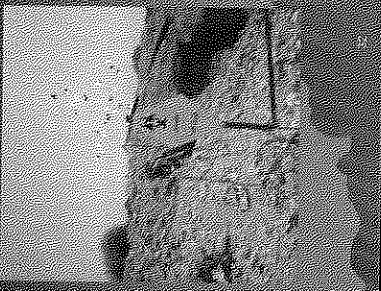


DATE	TIME	LOCATION	AMOUNT	REMARKS
1981	10:00	...	...	...
1981	11:00	...	...	...
1981	12:00	...	...	...
1981	13:00	...	...	...
1981	14:00	...	...	...
1981	15:00	...	...	...
1981	16:00	...	...	...
1981	17:00	...	...	...
1981	18:00	...	...	...
1981	19:00	...	...	...
1981	20:00	...	...	...
1981	21:00	...	...	...
1981	22:00	...	...	...
1981	23:00	...	...	...
1981	24:00	...	...	...
1981	25:00	...	...	...
1981	26:00	...	...	...
1981	27:00	...	...	...
1981	28:00	...	...	...
1981	29:00	...	...	...
1981	30:00	...	...	...
1981	31:00	...	...	...

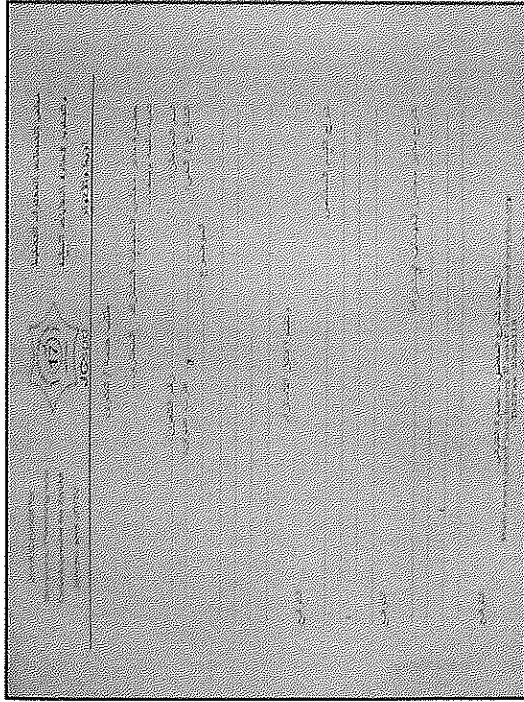
Controlling Vehicles Work

- There were no control on the vehicles before JCSpd, the vehicles just carry the containers randomly to the landfill.
- After JCSpd, the control system consist from 3 levels:
 - self control by the driver that he register on a form the time he arrives the container and the time when he depart, and the condition of the container (if full or semi full or empty, and if it needs removal).
 - Second level of control is that the section supervisor follow up the vehicles programs and check if all the container registered on the form has been removed or not.
 - The third control level is done by the executive Director or the section head to check the overall progress of the programs.
- Taking into consideration that not all the areas has containers and we will start distributing the new containers when receiving it from UNDP.

Collection and Disposal of Medical Waste



- After a study on Medical waste and especially in Jericho, JCSpd discovered that there are a big amount of medical waste that has to be removed, so for this JCSpd prepared a hole in the Jericho landfill site under the supervision of JICA Expert team especially Mr. Iskeguchi, in order to dispose the Medical Waste in it.
- The collection process started in the last August with an average of 200kg in the month and it is done 2 times a month.
- Taking into consideration that Medical waste collection is a Specialty for Ministry of Health and not a Specialty for JCSpd.



Operation Manual


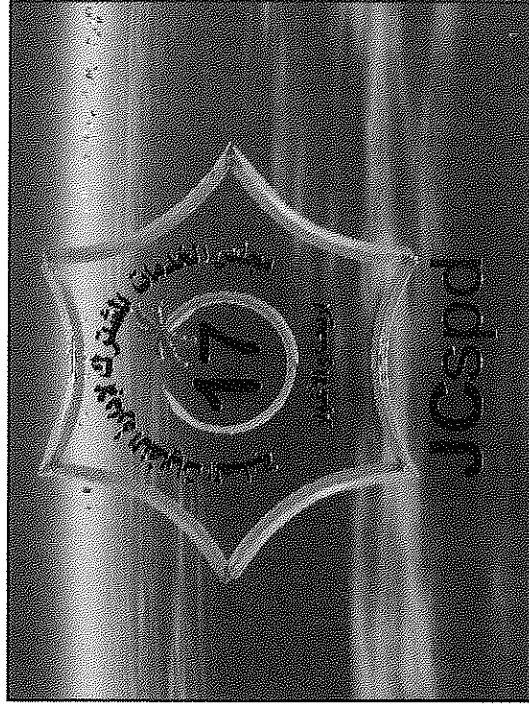
- ◆ Introduces the method of the landfill site.
- ◆ Gives information about the mechanism of waste disposal.
- ◆ Gives information about work procedure in different circumstances.
- ◆ Contains administrative instructions, related works and required reports.
- ◆ Contains instructions on landfill site operation, control, protection, emergency cases, and landfill maintenance.
- ◆ Describes the current landfill capacity and how to use it for a longer time by applying the information.
- ◆ Diagrams and drawings about the work process.

Improving Jericho landfill site

- ◆ In 9/10/2007 there were tender opening for Jericho landfill site extension, where the work will start during this month and will take 3 months.
- ◆ The extension size estimated by 8 donums, and a special cell will be prepared to receive medical waste.
- ◆ Constructing a special place for discharging wastewater.
- ◆ It is expected that the extended landfill site will serve about 4-5 years.


JCspgd
Public Relations

The Role of Public Relations in the enhancement and progress of JCspgd

PP Section Organized many programs and activities that supported JCspgd work

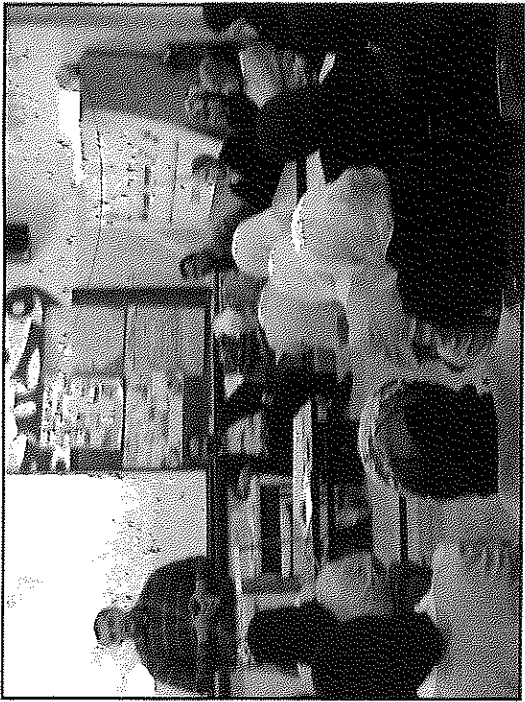
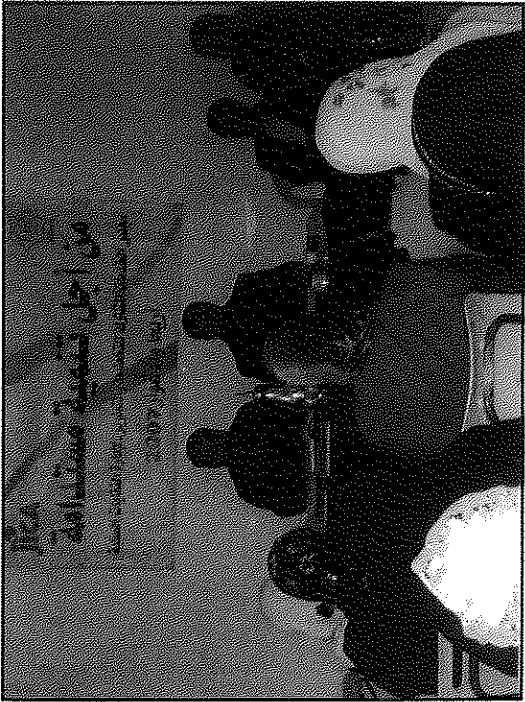
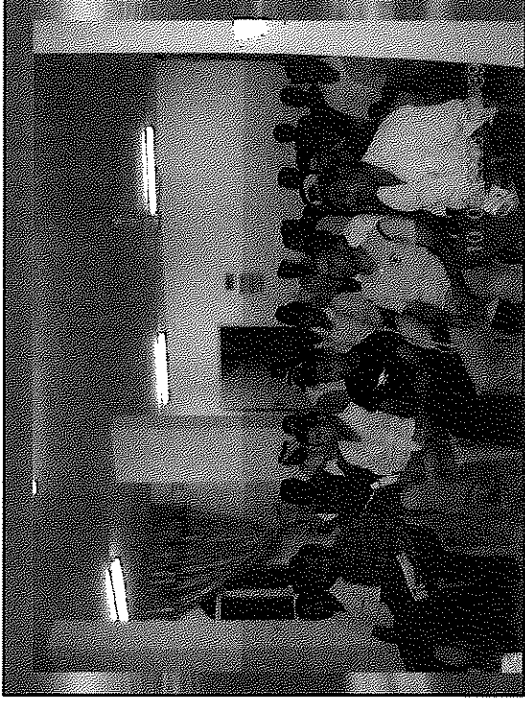
Community Meetings
Organizing meetings with all community levels



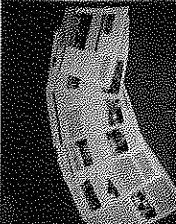
Public Relation Main Aims

- > To introduce JCspgd to the local community
- > The importance of the partnership between the citizen, JCspgd, and the local authorities
- > The necessity for the citizen to pay their fees
- > The relation of solid waste management with a sustainable development

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Releases



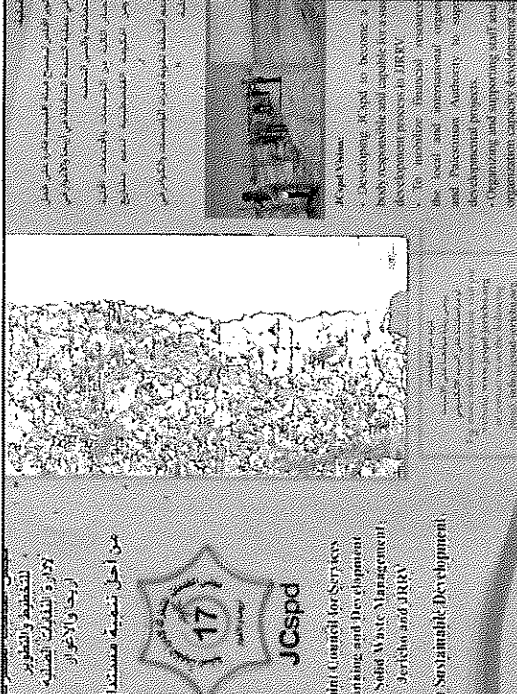
First: Periodical Newsletters

- Newsletter No.1 in February 2006
- Newsletter No.2 in March 2006
- Newsletter No.3 in August 2006
- Newsletter No.4 in October 2006
- Newsletter No.5 in January 2007
- Newsletter No.6 in March 2007
- Newsletter No.7 in July 2007
- Newsletter No.8 in September 2007

Community Meetings

Aims:

1. To raise community awareness about the existence of JCspd.
2. Supporting JCspd.
3. Hearing the opinion of citizens about the service.



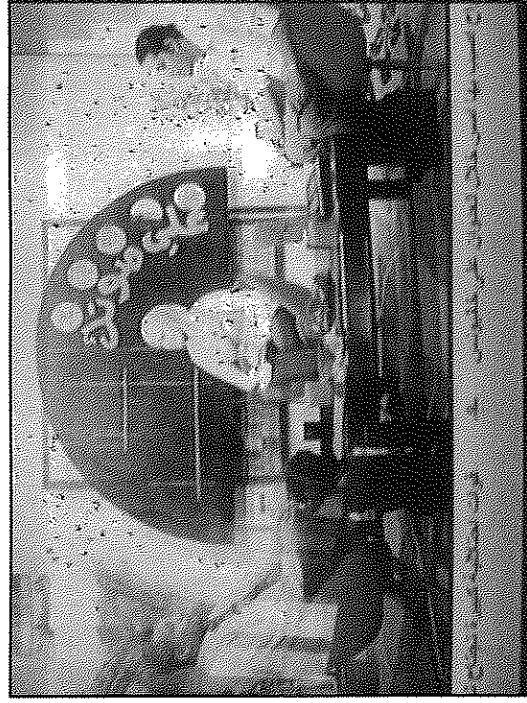
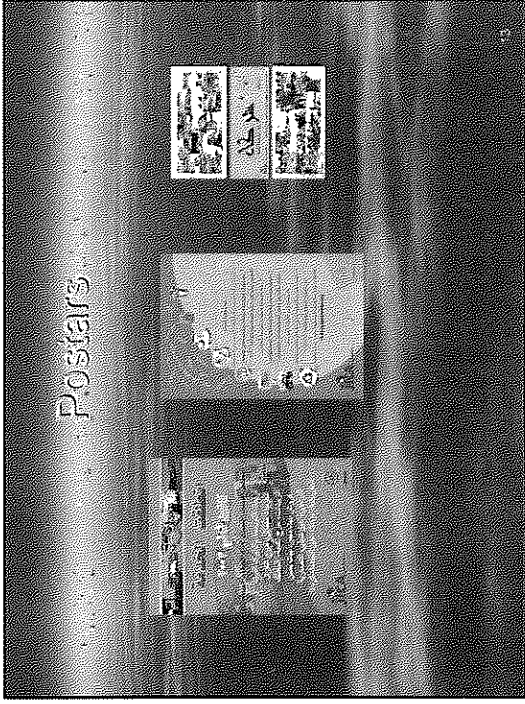
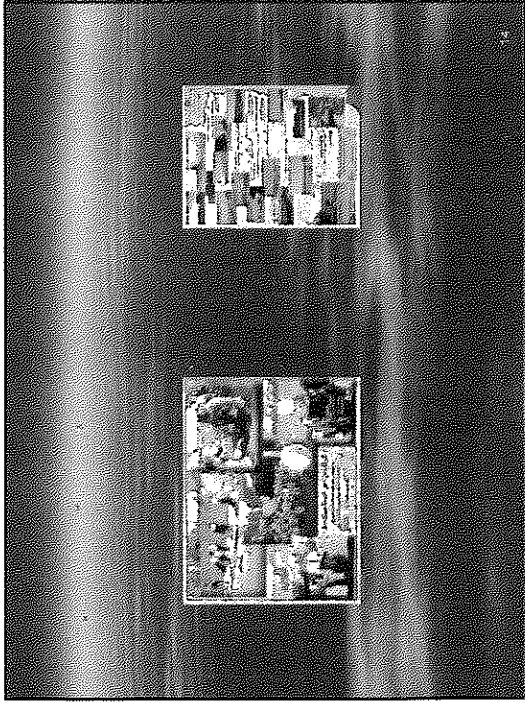
التطوير والتطوير
برامج الخدمات العامة
لرشد والاحتراف
من أجل تنمية مستدامة

JCspd
Joint Council for Services
and Development
Solid Waste Management
Jericho and JRV
Sustainable Development

Keyed Values:
 - Developing "People" to become
 more responsible and capable for a
 development process in JRV.
 - To maximize "resources"
 by local and international "organ-
 izations".
 - Encouraging "citizens" to take
 developmental process.
 - Organizing and supporting staff and
 management.

Second: Awareness Leaflets

- How to deal with waste.
- JCspd Basic Plan
- JCspd (Arabic – English)
- Waste Reduction Competition Announce
- Cleanest Quarter in JRRV Competition Announce.

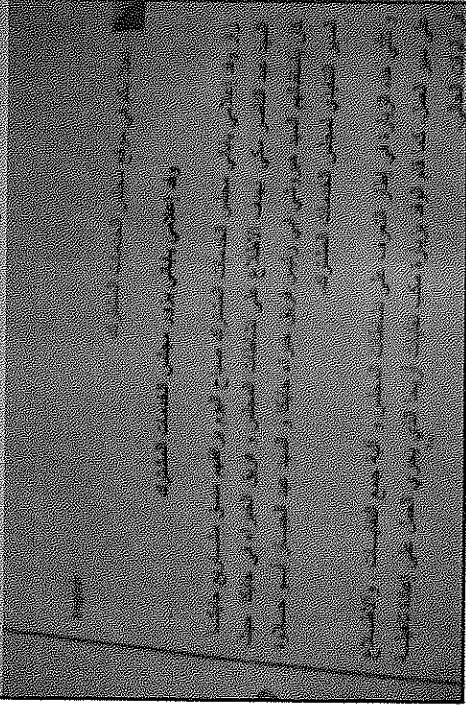


Media Coverage

PR section is covering all JCspd news and activities.

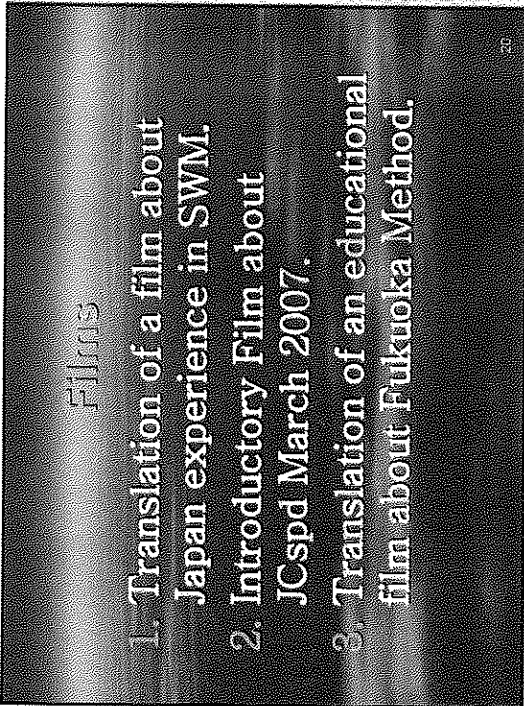
- Local newspapers.
- Local Radio Stations.
- Television.
- Wafa & Maan news agencies.
- Internet

Media Coverage



Films

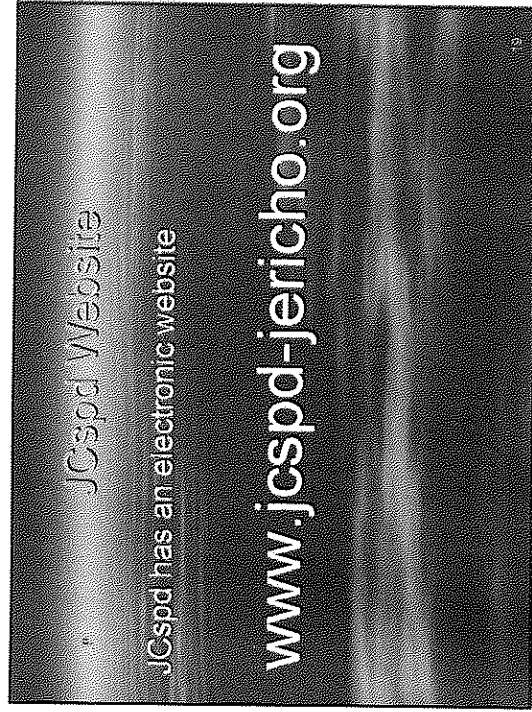
1. Translation of a film about Japan experience in SWM.
2. Introductory Film about JCspd March 2007.
3. Translation of an educational film about Fukuoka Method.



JCspd Website

JCspd has an electronic website

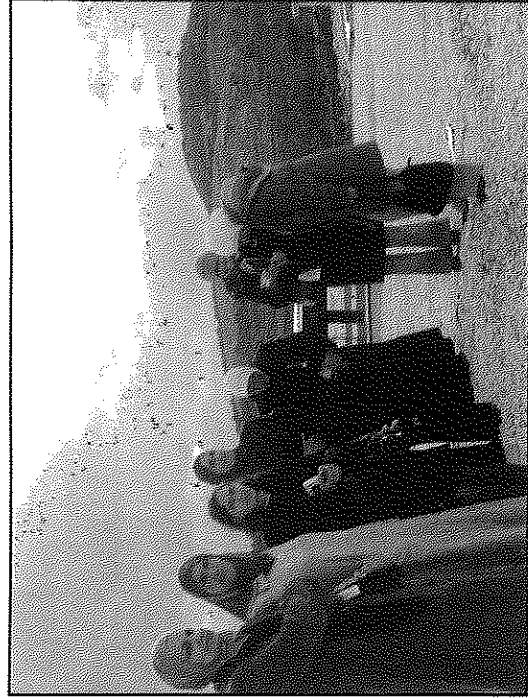
www.jcspd-jericho.org



Educational Trips

- JCspd has organized an educational fieldtrips to places related to waste recycling, waste reuse, in addition to landfill sites
- In 2006 2 fieldtrips has been organized to Jericho and Jenin landfill sites
- In 2007 3 fieldtrips has been organized to Jenin, Bethlehem, and Hebron.

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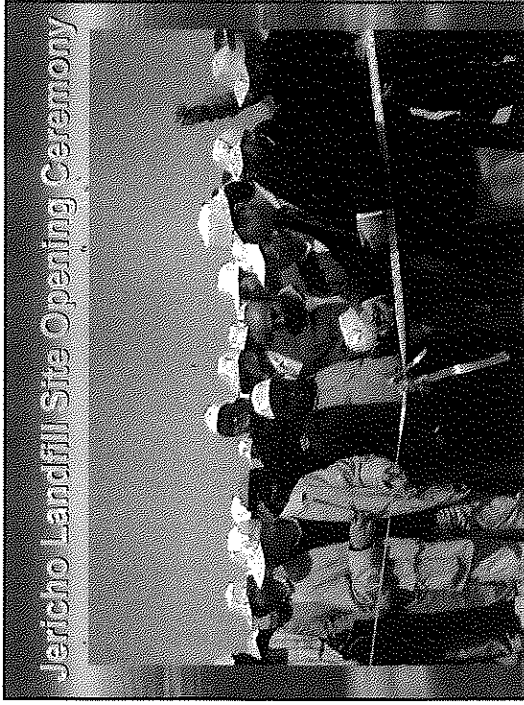


Films in Progress

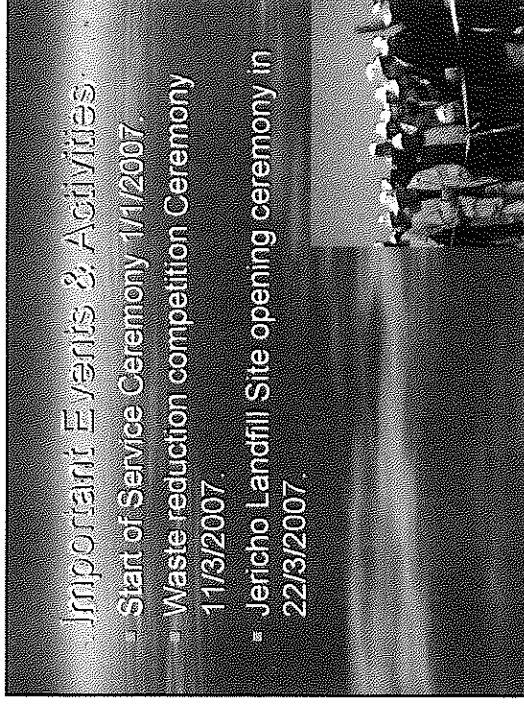
- Education film about waste reduction.
- Film about JCspd activities.
- A special Children Play (Monodrama).

2



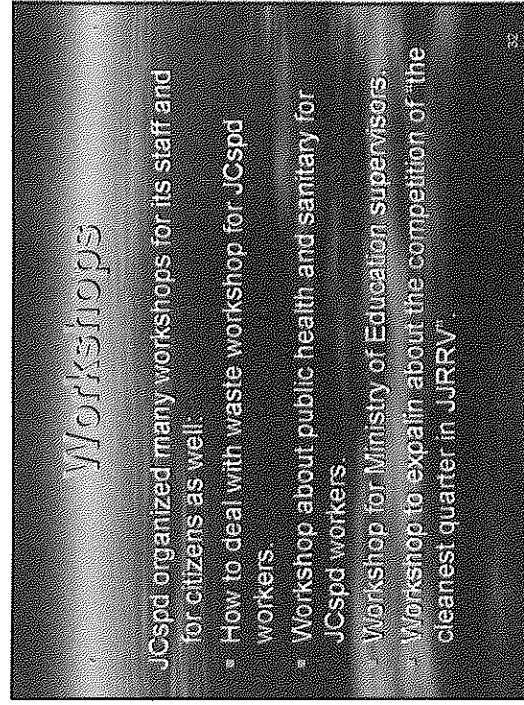


Jericho Landfill Site Opening Ceremony



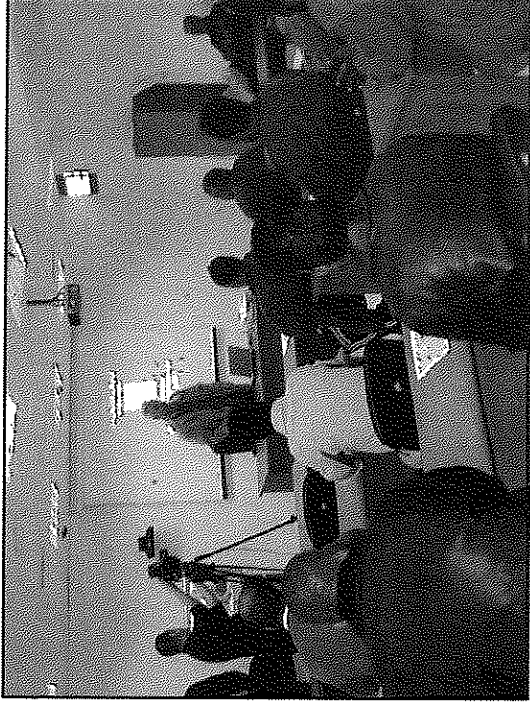
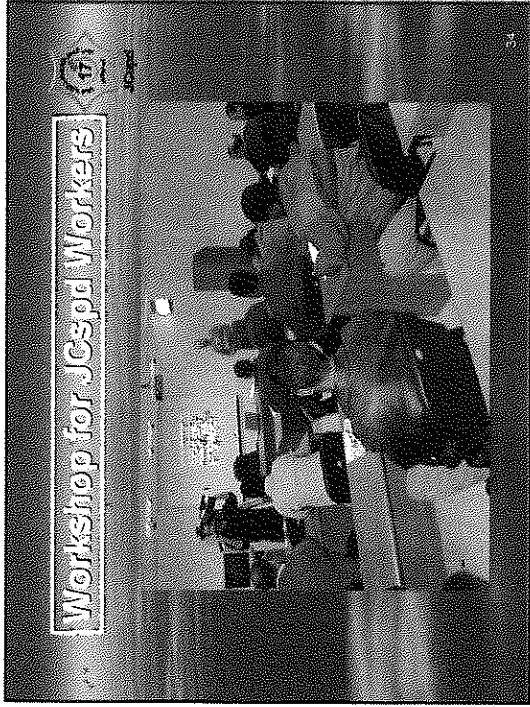
Important Events & Activities

- Start of Service Ceremony 1/11/2007.
- Waste reduction competition Ceremony 11/3/2007.
- Jericho Landfill Site opening ceremony in 22/3/2007.



Workshops

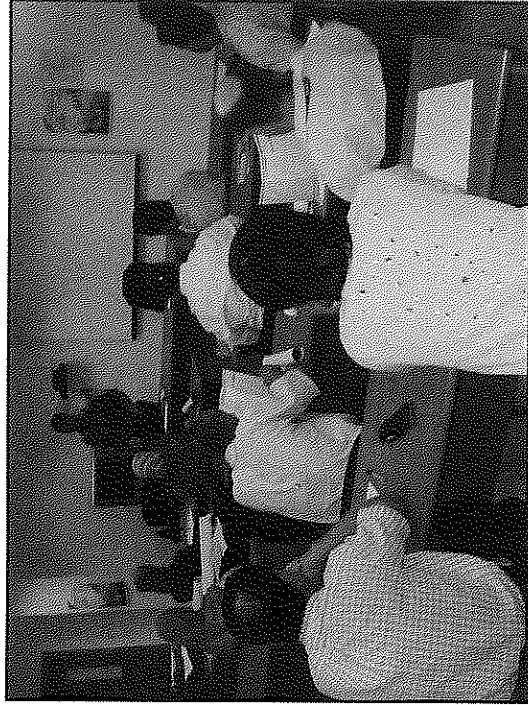
- JCspd organized many workshops for its staff and for citizens as well.
 - How to deal with waste workshop for JCspd workers.
 - Workshop about public health and sanitary for JCspd workers.
 - Workshop for Ministry of Education supervisors.
 - Workshop to explain about the competition of "the cleanest quarter in JRRV".



Advertisement Materials

- Special Medal about Service Start
- Special Mugs for Jericho Landfill opening.
- T-Shirts for supporting voluntary works.
- Caps.
- Esharps.
- Pens.

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Other Activities

- Relation with Local Organizations.
- Relation With International Organizations
- Sport Festival.
- Supporting Voluntary Works

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Advertisement Materials

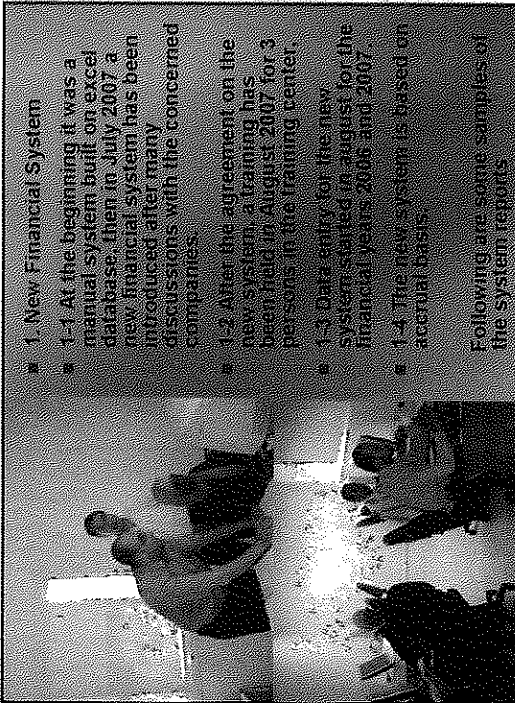


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Establishment of Administrative Financial System

Prepared By: Manal Romanen

First: New Financial System for JCspd
 Second: JCspd Financial Situation
 Third: 2008 Budget Preparation



- 1. New Financial System
 - 1-1 At the beginning it was a manual system built on excel database, then in July 2007 a new financial system has been introduced after many discussions with the concerned companies.
 - 1-2 After the agreement on the new system, a training has been held in August 2007 for 3 persons in the training center.
 - 1-3 Data entry for the new system started in august for the financial years 2006 and 2007.
 - 1-4 The new system is based on accrual basis.

Following are some samples of the system reports

Balance sheet at 31/08/2007 - NIS

Description	Sub amount	Credit amount	Description	Sub amount	Debit amount
Cheques			Current Assets		
Cheques In Banks	4,200.00	4,200.00	Cash NIS	618.50	
Accounts Payable			Arab Bank NIS	30,936.63	
Accounts Payable - Vendors	486,728.90	486,728.90	Acc. Rec. Fees	884,734.00	
Fund Balance			Acc. Rec. Contributions	121,194.00	1,017,483.13
Municipalities Contributions	193,887.00		Cheques		
JICA Donations	71,329.40		Cheques on Hand	2,700.00	2,700.00
Other Donations	5,816.00	273,032.40	Fixed Assets		
Retained Earning			Air Condition	10,193.40	
Surplus 2006	50,066.16	50,066.16	Acc. Dep. Air Condition	695.57	
Income and expense account balance		466,890.03	Accounting Software	17,220.00	
			Acc. Dep. Software	141.53	
			Office Furniture	12,970.00	
			Acc. Dep. Furniture	859.93	
			Computers & Networks	46,116.00	
			Acc. Dep. Computer & Network	4,586.33	80,212.04
			Accounts Payable		
			Accounts Payable - Staff	400.00	400.00
Total		1,120,795.17	Total		1,120,795.17

Income and expense account from 01/01/2007 to 31/08/2007 - NIS

Description	Sub amount	Credit amount	Debit amount
Revenue	978,572.00	978,572.00	
Expenses			788,972.24
Wages			15,036.00
Rent Expenses			5,641.90
Telephone Expenses			2,242.00
Electricity Expenses			112,783.56
Fuel Expenses			49,723.00
Car Expenses			8,846.00
Containers Maintenance			1,001.50
Cleaning & Hospitality			2,562.00
Cars Insurance			5,000.00
Software			2,382.58
Miscellaneous Expenses			2,778.00
Misc. Expenses			15.00
Transportation Expenses			41.23
Bank Charges			565,394.61
Depreciation Expenses			699.57
Depreciation of Air Condition			141.55
Software			8,931.93
Depreciation of Office Furniture			4,436.33
Depreciation of Computers & Network			6,287.26
Income and expense account balance		978,572.00	406,990.03
Total		978,572.00	978,572.00

2. JCspd Financial Situation

The Following tables showing JCspd incomes from 2006 contributions and 2007 fees.

Contributions 2006

Sector	Paid in 2006												Un-paid Amount	
	Budget	Feb	Un-paid	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total		
Electric	98,229.5	0.0	98,229.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	98,229.5	0.0	98,229.5
Water	8,958.5	3,957.0	4,948.5	1,000.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,857.0	59.7	3,948.5
Al-Jah	19,045.0	0.0	12,038.0	7,000.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5,038.0	40.4	10,000.0
Fire	4,050.0	0.0	4,050.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,500.0	0.0	1,550.0
Al-Rak	19,804.5	0.0	19,804.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10,000.0	50.9	8,804.5
Chad	6,030.0	6,030.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6,030.0	0.0	0.0
May Al-Zh	1,732.5	0.0	1,732.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,732.5
Em Al-Sag	3,451.5	0.0	3,451.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,451.5
Em Al-Sag	4,864.5	1,506.0	2,864.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,500.0	51.4	2,384.5
Kerdugh	742.5	56.4	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	150.0	10.6	0.0
Bandah	7,086.5	0.0	7,086.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5,215.5	100.0	0.0
Foosh Ba	3,215.5	2,715.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	881.0	160.9	0.0
Em Shadi	891.0	891.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	891.0
Novel	1,350.0	1,350.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,350.0
Em Hesar	5,394.0	5,394.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5,394.0
Al-Nasr	6,050.0	6,050.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6,050.0
Al-Aghar	4,027.5	4,027.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,027.5
Subtotal	97,662.5	42,195.0	55,478.5	3,008.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22,855.0	74.4	22,855.0
Total	151,887.0	42,195.0	111,594.0	3,008.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22,855.0	74.4	22,855.0

Notes: total paid amount for the period (Feb - Dec) is 100% of the budget. The remaining amount is listed during preparation period. The remaining amount is listed during preparation period for the local authorities. Also the effect of the remaining amount is listed during preparation period.

JCspd Income from 2007 Fees

Unit Address	MS/month	9 month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Har	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Jah	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Rak	100.0	900.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	56%
Al-Sag	100.0	900.0										

JCspd Monthly Expenses

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
General Expenses	16807.79	812	1487.5	6977.5	8603	1567.5	7980	2595
JCspd salaries by contracts	6529.4	7451	7500	7500	7500	7500	9000	9000
Vehicles Insurance			1500		1500		2000	0
Seconded employees salaries	26273.91	26678.2	26826.2	26979.7	29039.69	29979.6	30782.2	30640.4
Vehicles Maintenance	10473	9989	12036	5820	19832	8647	7536	10440
Municipality								
Equipments work	3300	9200	9670	10410	7900	8420	14205	10430
Fuel/Municipality	16956.26	14661	15131.6	14814.4	15748.8	12292	14636.7	15085
Fuel/IRRV	2985	3378	4180	2898	3086	3280	3395	3621
containers Maintenance	1514	1860	1140	2100	1540	742	1330	718
oil & Washing/ Municipality	1500	1500	1500	1500	1500	1500	1500	1500
Total Expenses	86338.36	75348.2	80671.3	79999.6	92249.49	72136.1	91864.9	84429.4

Cash Movement

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
INCOMES FROM VEHICLO	60,017.16	63,786.20	65,303.80	61,624.10	71,560.49	59,791.47	69,489.91	69,013.40
INCOMES of other IAS	3,000.00	3,000.00	3,000.00	3,265.00	25,000.00	7,900.00	26,440.00	10,000.00
Other Incomes/Interests	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,200.00
Total Income	63,017.16	66,786.20	68,303.80	64,889.10	96,560.49	67,691.47	95,930.91	81,013.40
TOTAL OF EXPENSES	86,338.36	75,348.20	80,971.30	79,999.60	92,249.49	72,136.10	91,864.90	84,429.40
Deficit Surplus	-23,321.20	-8,561.99	-12,667.50	-15,110.50	-25,689.00	-4,444.63	-1,933.99	-2,616.00

2008 Budget Preparation

- 2007 budget was prepared upon a small amount of data prepared by the Executive Director and JICA Expert Team.
- Now JCspd has many records and data.
- From now on JCspd will prepare the budget with the cooperation of its section (Financial, Technical and Public Relations).
- Even it is the first experience for the staff in preparing a budget, for that discussions were between JCspd and JICA Expert Team about:
 - Income estimation, determining the required number of manpower, employee cost, fuel and maintenance cost, miscellaneous costs, and depreciation.

3. 2008 Budget Preparation

Budget preparation passed through many steps as the following:

Table 3: Details of Steps Budget Preparation 2008 (off-copy)

Step	Description	Responsible	Start Date	End Date	Status
1	Budget Preparation Preparation (JCspd)	JICA	Jan 2008	Jan 2008	Completed
2	Budget Preparation Announcement	JICA	Jan 2008	Jan 2008	Completed
3	2008 Budget Form	JICA	Jan 2008	Jan 2008	Completed
4	2008 Budget Preparation	JICA	Jan 2008	Jan 2008	Completed
5	2008 Budget Approval	JICA	Jan 2008	Jan 2008	Completed
6	2008 Budget Implementation	JICA	Jan 2008	Jan 2008	Completed
7	2008 Budget Monitoring	JICA	Jan 2008	Jan 2008	Completed
8	2008 Budget Evaluation	JICA	Jan 2008	Jan 2008	Completed
9	2008 Budget Reporting	JICA	Jan 2008	Jan 2008	Completed
10	2008 Budget Archiving	JICA	Jan 2008	Jan 2008	Completed
11	2008 Budget Review	JICA	Jan 2008	Jan 2008	Completed

4. Excepted Activities

- One of the future activities that we are working on is: to establish a fees collection system special for JCspd , because of the bad financial situation of the council and the failure of LAs in paying their dues so the thinking about this activity comes in order to enhance the financial capacity of JCspd.

13

Proposed (Temporal) HCW Management System in JJRRV

July 2007

JCspd
for
Solid Waste Management in Jericho and Jordan River Rift Valley

1

Generation Sources of HCW in JJRRV

- Hospital/Clinic (including laboratory)

	In Jericho	In 17 LGUs
Hospital/Healthcare center	3 (MoH)	6 (MoH) 2 (UN) 7 (?)
Clinic	15 (Private)	2 (Private)
Veterinary clinic	3	0
Sub-total	21	17

- Ordinary house (home medical care)
No. of home medical care patients: unknown

2

Amount of HCW Generated in JJRRV

- Measurements (Top 3 HCW generators in JJRRV)

Hospital/Clinic	HCW amounts	Remarks
New Jericho Hospital	16 kg/day	as 20% of total waste generation, 80.5 kg/day reported in 2005
Jericho Health Department, Ministry of Health	10 kg/day	reported in 2006
Al-Talaha Center	7 kg/day	as 20% of total waste generation, 36 kg/day reported in 2005
	6 kg/day	reported in 2005

- Estimation by the JICA Study in 2006
 - ~ 32 kg/day at maximum (= 29 kg/day x 1.1)

3

Appropriate Treatment Technologies by Kind of HCW in JJRRV

Technology	Healthcare wastes									
	Infectious waste	Anatomic waste	Sharps	Pharmaceutical waste	Cytotoxic waste	Chemical waste	Radioactive waste	Low-level Infectious	Low-level Infectious	Low-level Infectious
Rotary kiln	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Double chamber incinerator	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Single chamber incinerator	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Open or pit burning	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Chemical disinfection	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Wet thermal treatment (Autoclave)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Microwave irradiation	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Safe burying on 100m ² specific lots at landfill sites	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Sanitary landfill	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Other methods										

Source: Modified from Safe Management of wastes from health-care activities, WHO, 1999.

