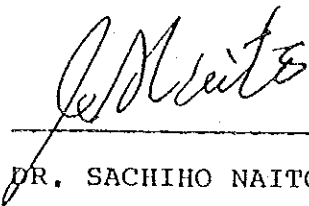


ATTACHMENT 3

MINUTES OF MEETING
FOR
THE FEASIBILITY STUDY
ON
THE PLAN FOR REFUSE COLLECTION, TREATMENT AND DISPOSAL
IN
THE CITY OF ALEXANDRIA
OF
THE ARAB REPUBLIC OF EGYPT

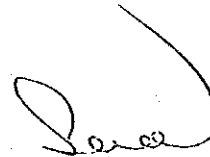
March 29, 1984
Alexandria, Egypt

For JAPAN INTERNATIONAL
COOPERATION AGENCY (JICA)



DR. SACHIHO NAITO
TEAM LEADER
JICA PRELIMINARY STUDY TEAM

For GOVERNORATE OF ALEXANDRIA



SAAD RAFAEL
General Manager of Follow-up Dept.
for the Governor of Alexandria



MINUTES OF MEETING

The Japanese Preliminary Study Team (Japanese Team) organized by the Japan International Cooperation Agency (JICA) visited Alexandria and had a series of discussions with the authorities concerned of the Governorate of Alexandria (the Governorate).

As a result of the meetings, which were held in a most friendly atmosphere, both sides agreed upon the Scope of Works for the Feasibility Study on the Plan for Refuse Collection, Treatment and Disposal in the City of Alexandria of the Arab Republic of Egypt.

The record of the meetings is as follows:

1. According to the agenda, at the beginning, Mr. Saad Rafael explained the background of the Project which was requested to the Government of Japan.
2. Following the explanation by Mr. Saad Rafael, Dr. S. Naito presented the outline of the "Scope of Works". In this presentation, Dr. S. Naito pointed out that the composting system might be decided among several options after careful comparative studies although the composting system is understood as an Egyptian preference for solid wastes treatment of Alexandria.
3. After questions & answers regarding both presentations, following items have been agreed by both parties.
 - a. The Governorate maintained that the undertakings specified in 1. and 4. of VI. are beyond the authority of the Governorate. And as for provision of a suitable office space in the City of Alexandria and 2 vehicles with drivers, mentioned in VI.-2, the Governorate stated that the Governorate would not be able to afford the requirement because of lack of sufficient budget available in the Governorate. After being discussed, both



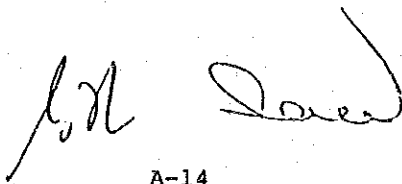
parties agreed that the matter would be written in a letter to the Ministry of Investment & International Cooperation from the Governorate, It is also agreed that the letter shall be attached to the "Scope of Works",

b. Regarding the interpretation whether the solid wastes include industrial wastes or not, it has been agreed as follows:

The industrial wastes to be excluded in the Study are liquid and sludge wastes and wastes which shall be treated by the industries themselves, such as wastes from port and ship , construction and demolition wastes and agricultural wastes.

4. For the data and information materials requested by Japanese Team, the Governorate promised to provide said materials for Japanese Team before they leave Alexandria.

The remainder, if any, will be sent to JICA Cairo Office at their earliest convenience.

Two handwritten signatures in black ink, one on the left and one on the right, positioned above the page number.

Appendix

LIST OF ATTENDANTS

Date : March 26 - March 29, 1984

The Governorate

Saad Rafael	General Manager Follow-up Department Director of composting plant
Eng. Mohamed Abd-Allah	Deputy of Mr. Saad Rafael
Hussein Hassan Roushdy	Director General of Electrical & Mechanical Department
Dr. Olfat Elsebaie	Professor of Environmental Chemistry High Institute of Public Health Environmental Health Dept., Alexandria University
Dr. Hassan Mitwally	Professor of Env. Health ex. Chairman of the Dept. Consulting Engineer
El Sayed El Badrashiny	General Manager of production and Economic affairs sector
Mohammed Mohammed Aly	Economist in production and Economic affairs sector
Dr. Ahmed Hussein	Assistant Lecturer, Environmental Health Department, High Institute of Public Health, Alexandria University

JICA Preliminary Survey Team


Dr. Sachiho Naito (Team Leader)
Mr. Hideo Mori
Mr. Hirotoshi Nagano
Mr. Hiroki Hashizume
Mr. Mitsuo Kijjo

JH *Sae*

MINUTES OF MEETING
FOR
THE FEASIBILITY STUDY
ON
THE PLAN FOR REFUSE COLLECTION, TREATMENT AND DISPOSAL
IN
THE CITY OF ALEXANDRIA
OF
THE ARAB REPUBLIC OF EGYPT

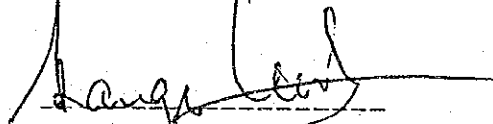
SEPTEMBER 1, 1984
ALEXANDRIA, EGYPT

FOR GOVERNORATE OF ALEXANDRIA



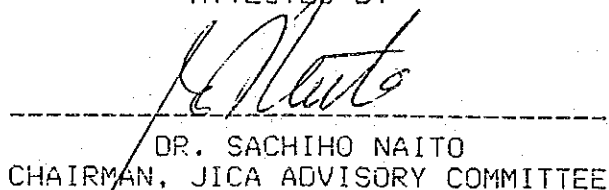
SAAD RAFAEL
GENERAL MANAGER OF FOLLOW-UP
DEPT., FOR THE GOVERNORATE
OF ALEXANDRIA

FOR JICA STUDY TEAM



KANGO MITO
TEAM LEADER

ATTESTED BY



DR. SACHIHO NAITO
CHAIRMAN, JICA ADVISORY COMMITTEE

An official meeting was held between Alexandria Governorate and JICA Study Team chaired by JICA Advisory Committee on this Project at the Governorate office of Alexandria on Sept. 1st, 1984 in order to discuss the Inception Report prepared by JICA Study Team.

After an intensive discussion, all points were clarified and the Inception Report was confirmed by both parties.

Minutes of discussion is as follows:

1. Dr. Naito made an opening address. In his speech, he expressed his gratitude to Egyptian side on their cooperation, and explained the purpose of their visit of this time, the role and function and the schedule of Advisory Committee.

2. Mr. Saad expressed his gratitude on behalf of the Governorate for the visit of Advisory Committee, and promised Study Team to provide all information necessary for the Study.

3. Mr. Mito on behalf of JICA Study Team outlined the Study and bridged to Mr. Ogawa to elaborate the Study schedule.

4. Mr. Ogawa explained the schedule of the field work studies;

- 1) Study on solid waste generation in residential areas of high, middle and low income groups by collecting samples from each household.
- 2) Composition analysis of solid waste collected in the study 1)
- 3) Study on total amount of solid waste at the two dumping sites, i.e. Airport and Gate No. 8
- 4) Interview with 200 households on their solid waste storage and discharge
 - Mr. Hussein pointed out the difficulty in measuring the weight of solid waste loaded on vehicles.
 - Japanese Team answered that this will be done by visual observations, estimating the quantity of solid waste.
 - Dr. Olfat commented that 200 samples of interview survey are not sufficient, and suggested to make interviews with 300 households at the same time with collecting solid waste samples in the study 1). Also she commented 300 samples may not be sufficient to represent whole Alexandria.
 - JICA Study Team replied that her suggestion will be taken into consideration, but that it may be difficult to conduct the interviews at the same time because of

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the time restriction, and also replied that this survey is adequate enough to understand general attitude of the community.

- 5) Mr. Hussein requested to make a summary of each report regarding this Study in order to have the people concerned well informed.
 - Advisory Committee agreed to prepare summary in both English and Arabic.
- 6) It was confirmed by both parties that the master plan study of Phases I and II covers whole city area of Alexandria excluding the harbor area.
- 7) Japanese side requested Egyptian side to provide a larger office space for JICA Study Team. Mr. Saad said that he would do his best to meet the request.
- 8) Japanese side advised that the Governorate should approach the Ministry of Planning and International Cooperation with regard to sending a counterpart to Japan for training. The nomination should be made known to JICA HQ by the end of September.
- 9) Japanese side requested Dr. Olfat's cooperation in providing student assistants (expense borne by JICA Study Team) for the field studies. She acknowledged the request.

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LIST OF ATTENDANTS

Date: September 1, 1984

Place: Governorate Office of Alexandria

Attendants:

Saad Rafael	General Manager of Follow-up Department
Hussein Hassan Roushdy	Director General of Electrical & Mechanical Department
Olfat Elsebaie	Professor of Environmental Chemistry, High Institute of Public Health, Environmental Health Dept., Alexandria University
Mohammed Mohammed Aly	Economist in Production & Economic Affairs Section
Kamel Ahmed Fahmey	Assistant Manager Follow-up Site Division of Follow-up Department

JICA ADVISORY COMMITTEE

Sachiho Naito	Chairman
Hiroki Hashizume	
Mitsuo Kinjo	

JICA STUDY TEAM

Kango Mito	Team Leader
Hiroshi Abe	
Toshiro Hamada	
Hisashi Ogawa	

S.R. *K.M.*

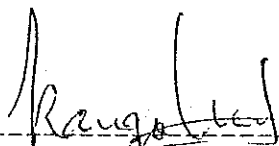
MINUTES OF MEETING FOR

THE FEASIBILITY STUDY ON
THE PLAN FOR REFUSE COLLECTION, TREATMENT AND DISPOSAL IN
THE CITY OF ALEXANDRIA OF
THE ARAB REPUBLIC OF EGYPT

Alexandria, Egypt

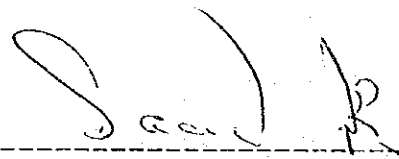
6th December 1984

For Japan International
Cooperation Agency



Kango Mito
The Study Team Leader

For the Governorate of Alexandria



Saad Raphael
General Manager
The General Follow-up Dept.

MINUTES OF MEETING

A meeting was held on the 6th of December 1984, between the concerned officials of the Alexandria Governorte and the JICA Study Team to discuss and confirm the Progress Report (1) (hereinafter referred to as the Report) prepared by the latter. The following have been confirmed by both parties:

1. The Report was accepted by the Egyptian side as common recognition of the present situation of the solid waste management in Alexandria, and the Report will be used as a basis for the further study. A few errors in the Report were pointed out by the Egyptian side, and they were corrected accordingly.
2. The Egyptian side will inform the Study team of any points to be corrected or modified, if any found, by the 10th of January 1985, to Mr Mitsuo Kinjo of the JICA headoffice in Tokyo. (The address is shown in the list of the Attendants.)
3. The etimated future population and amount of solid waste for each district as shown in the attached table and drawing, will be used as a basis for preparation of the masterplan. The figures will be subject to minor modifications whenever found necessary by the further verification.
4. A short term basic improvement plan concentrating on the Middle district will be discussed in preparation of the master-plan with the target year 2000.
5. In response to the request from the Study team, the Egyptian side agreed to keep all the records listed below and make them available to the Study team upon their return to Alexandria in May 1985.
 - (1) Record of trip of garbage collection vehicle of both the districts and the ADS from 1st December 1984 until arrival of the Study team in May 1985.
 - (2) Record of repair of garbage collection vehicles for the same period mentioned above.
 - (3) Record of weight of each garbage vehicle as registered at the Abis Compost Plant for the same period as mentioned above.

h. l. - S.P.

Attendants

The Egyptian side:

Mr Saad Raphael: General Manager, The General Follow-up dept.

Mr Hussein Hassan Roushidy, Deputy Director, Alexandria Housing
Directorate

Dr Olfat Elsebaie, Professor of Environmental Chemistry,
Higher Institute of Public Health

Mr Ahmed: Chief of the Follow-up Cleansing Dept.

Mr Kamel Ahmed Fahmey, Assistant Manager, Site Follow-up Section,
The General Follow-up Dept.

Mr Khairy: Inspector, the Follow-up Cleansing Dept.

JICA Advisory Committee Members:

Mr Hirotohi Nagano, Manager of Minamitotsuka Plant, Environment
Activity Agency, Yokohama City

Mr Mitsuo Kinjo, Senior Project Officer,
Social Development Cooperation Dept,
Japan International Cooperation Agency
Mitsui Bldg. 2-1-1 Nishi-Shinjuku,
Shinjuku, Tokyo,
Japan

JICA Study Team:

Mr Kango Mito, Study Team Leader

Mr Kotaro Takatsuno

Mr Hiroshi Abe

Mr Susumu Shimura

Mr Keiji Nagayoshi

Mr Kiichiro Sakaguchi

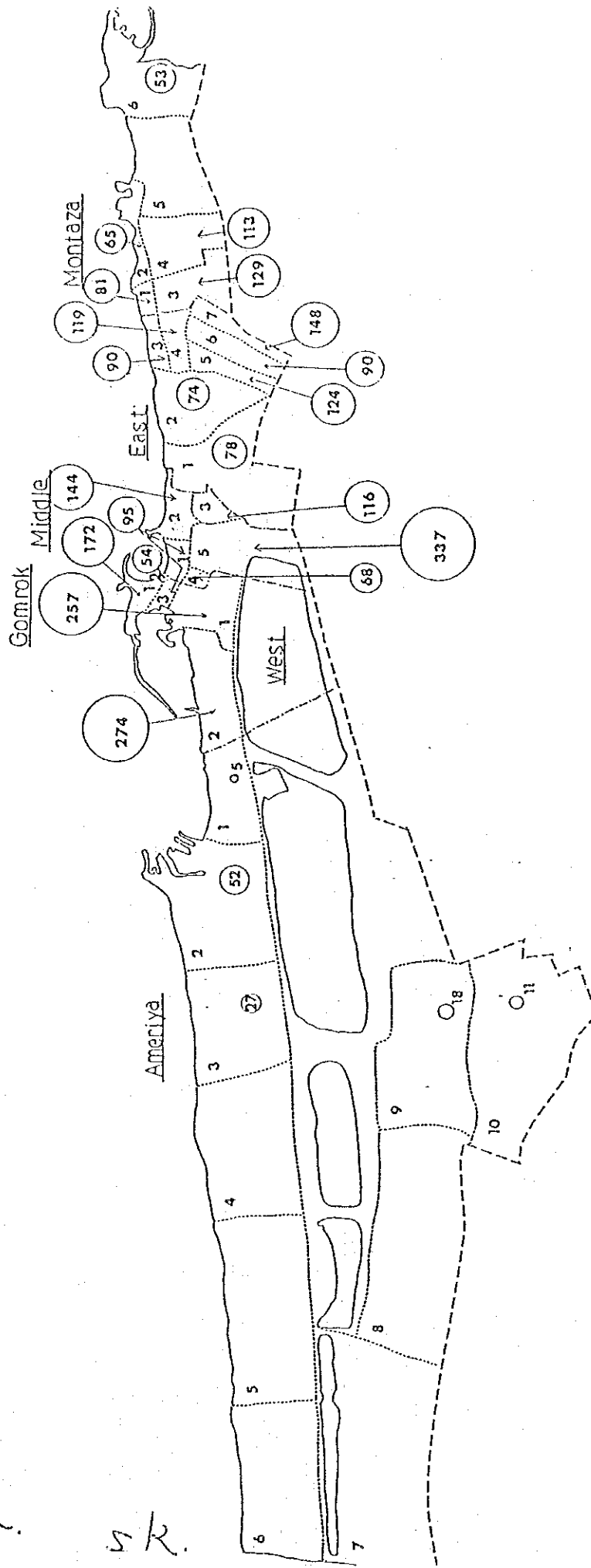
Mr Mahmoud Riad

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M. Mito *S. K*

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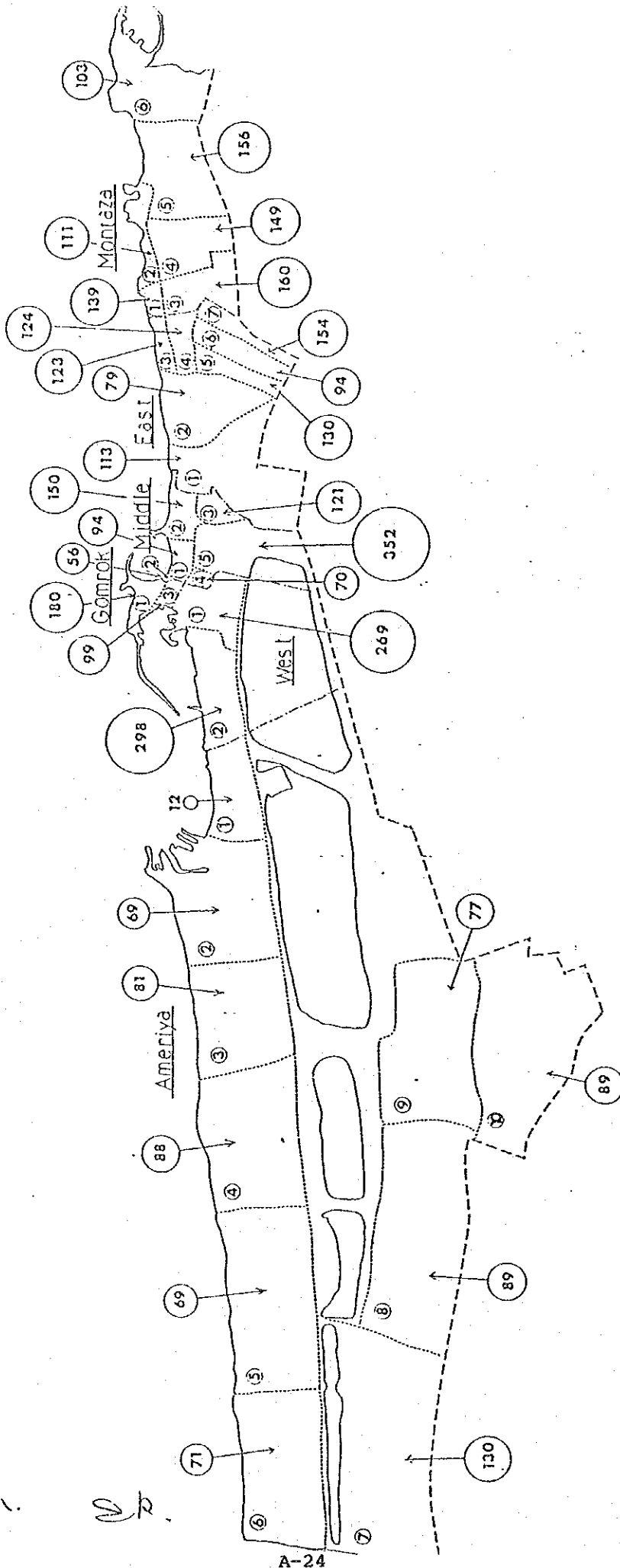


unit; 1000 person

Fig 1 Population Distribution in 1984

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unit; 1000 person

Fig 2 Population Distribution in 2000

Table 1 Present and Future Solid Waste Quantity in each district

District	Sub District	Zone number	1984	1990	2000	Remark
MONTAZA	MONTAZA	1	34 ton	45	75	
		2	22	28	58	
		3	41	49	64	
		4	25	43	59	
		5	0	20	61	
		6	17	23	41	
	Sub Total			155	218	357
East	Sidi Gabar	1	45	57	81	
		2	42	49	63	
	Raml	3	50	61	87	
		4	45	50	62	
		5	42	47	55	
		6	30	34	40	
		7	49	44	66	
Sub Total			303	353	455	
Middle	Azrayn	1	82	97	128	
	Bab Shirki	2	73	82	104	
		3	53	61	75	
	Moharambey	4	30	42	41	
		5	153	142	216	
Sub Total			391	447	564	
Gompok	Gompok	1	113	120	169	
	Manshia	2	26	29	37	
	Sabban	3	51	58	75	
	Sub Total			190	208	281
West	Karmour	1	84	94	112	
	Mina El Basal	2	90	101	124	
	Sub total			173	195	236
Ameriya	Ameriya	1	1	2	5	
		2	16	18	26	
		3	8	13	30	
		4	0	4	32	
		5	0	4	26	
		6	0	4	33	
		7	0	6	49	
		8	0	4	34	
		9	5	10	29	
		10	4	7	34	
Sub Total			34	72	298	
Total			1246	1501	2191	ton

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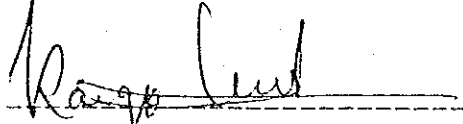
MINUTES OF MEETING FOR

THE FEASIBILITY STUDY ON
THE PLAN FOR REFUSE COLLECTION, TREATMENT AND DISPOSAL IN
ALEXANDRIA IN THE ARAB REPUBLIC OF EGYPT

Alexandria, Egypt

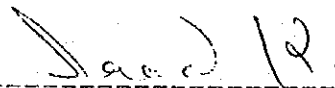
27th March 1985

For Japan International
Cooperation Agency (JICA)



Kango Mito
Leader of JICA Study Team

For the Governorate of Alexandria



Saad Raphael
General Manager,
The General Follow-up Dept.



Dr. Sachiho Naito
Chairman of JICA Advisory Committee

A meeting was held on 25th, 26th & 27th March 1985, between the concerned officials of the Alexandria Governorate (hereinafter referred to as 'Egyptian side') and the members of Advisory committee and Study Team of Japan International Cooperation Agency (hereinafter referred to as 'Japanese side') to discuss mainly on the Interim Report (hereinafter referred to as 'Report') and the Phase III Study.

1. Japanese side submitted 20 copies of the Report consisting of a main and a summary.
2. Japanese side explained the outline of the Report, and concluded that the Alternative 2 (Full sanitary landfill) is the most optimum alternative, while the Alternative 1 (Full composting) is the second best alternative.
3. The Egyptian side thanked the JICA Study Team for their efforts. Egyptian side maintained that Alternative 1 (Full composting) be the most favourable in view of the policies of the Egyptian Government for expanding agriculture by greening desert land, and making maximum use of the waste as resources.

4. Framework of Phase III Study

Through the discussion, both parties agreed as follows:

(1) JICA Study Team will carry out feasibility study for the solid waste management (collection, haulage, street sweeping and disposal) for Middle district with the target year 2000.

Planning and design will be prepared for the sanitary landfill site to be located in the existing Moharam Bey dump site which will serve for Gomrok and West in addition to Middle district. The Moharam Bey site has:

- Area: 140 feddan (56 ha.)
- Capacity: over 10 years waste amount

- i. JICA study team will study the method for the best utilization of Moharam Bey dump site as well as offer guidance on the choice of sites of sanitary landfill.
- ii. JICA Study Team will study sanitary landfill bearing in mind land prices as well as difficulty in obtaining covering soil nearby Moharam Bey.

(2) A feasibility study including composting will be carried out in response to Egyptian side request.

K.M. S.R. /

- i. A study will be made for an additional compost plant at Abis with a capacity of 300 tons per day (16 operating hours).
- ii. As regards to compost processing, those system which are proposed in the Master Plan will be discussed in the course of Phase III study with Alexandria Governorate.
- iii. JICA Study Team will evaluate operation of the existing Abis Compost Plant and suggest possible ways to improve it.

(3) Estimated waste amount

The estimated waste amount is as follows:

DISTRICT	1984	1990	2000	VACATIONER WASTE
Middle	389	433	550	18
Gomrok	192	215	276	0
West	174	195	236	0

(4) Commencement of Phase III Study

Phase III study will start in the middle of June 1985.

5. Request to the Alexandria Governorate by JICA Study Team

Egyptian side accepted all the request as shown in the attachment.

6. Egyptian side raised the below-mentioned points, which will be taken into consideration by JICA Study Team during Phase III study.

(1) Disposal site in the Green Belt is not suitable from the following view points:

- a. Ground water level is expected at 0.3 m below the ground surface.
- b. Difficulty in land acquisition.

(2) Container method for waste collection will be studied in addition to bag-packed method.

(3) Yearly waste collection charge will not exceed LE 18 per household including plastic bag purchase cost.

H.M. S.R. /n

- (4) All the waste of vacationers will be disposed of by sanitary landfill.
- (5) JICA Study Team will carry out the study for the solid waste management in Alexandria considering utilization of both existing equipment and the equipment which are planned to be introduced.

7. Egyptian side reported the operation records of the Abis Compost Plant as follows:

Salvage rate:

- a. Compost: 40 %
- b. Reusable materials: 6.21 % *
- c. Rejects: 12 - 15 %

* Breakdown of Reusable material:

- Paper: 2.83 %
 - Textile: 1.65 %
 - Metal: 0.87 %
 - Plastic: 0.36 %
 - Glass: 0.50 %
-
- Total: 6.21 %

h.c. SR / m

PARTICIPANTS:

Egyptian Side

- Mr Saad Raphael, General manager of the General Follow-up Dept.
- Mr Hussein Hassan Roushidy, Deputy director, Alexandria Housing Directorate
- Dr Olfat Elsebaie, Professor of Environmental Chemistry, Higher Institute of Public Health
- Dr Mounir S. Neamatalla, Governorate consultant
- Mr Ahmed, Chief of the Follow-up Cleansing section
- Mr Kamel Ahmed Fahmey, Assitant manager, Site Follow-up Section

Japanese Side

* JICA Advisory Committee Members

Dr Sachiho Naito, Chairman of Advisory Committee
Professor, Kanto Gakuin University

Mr Hideo Mori, Director of Management Dept., Facility Div.,
Public Cleansing Bureau, Osaka City

* Japan International Cooperation Agency (JICA)

Mr Mitsuo Kinjo, Senior Project Officer

* JICA Study Team

Mr Kango Mito, Study team leader

Mr Kotaro Takatsuno

Mr Masato Ohno

Mr Kiichiro Sakaguchi

Mr Mahmoud Salah Riad

h.w. Sk. /

ATTACHMENT

Request to the Alexandria Governorate by JICA study team

1. Additional Counterparts

For the successful execution of Phase III study, in addition to the present counterparts, the following experts (counterparts) are necessary who will cooperate with the JICA study team on full time basis.

- (1) For the study of collection, haulage and street sweeping
 - a. Cleansing general supervisor of Middle District
 - b. 2 experts in planning (Middle District Cleansing Dept.)
 - c. 1 expert in organizational matter (Middle District Cleansing Dept. or the Governorate)
 - d. 1 expert in maintenance (Central Workshop)

(2) For study of sanitary landfill & compost plant

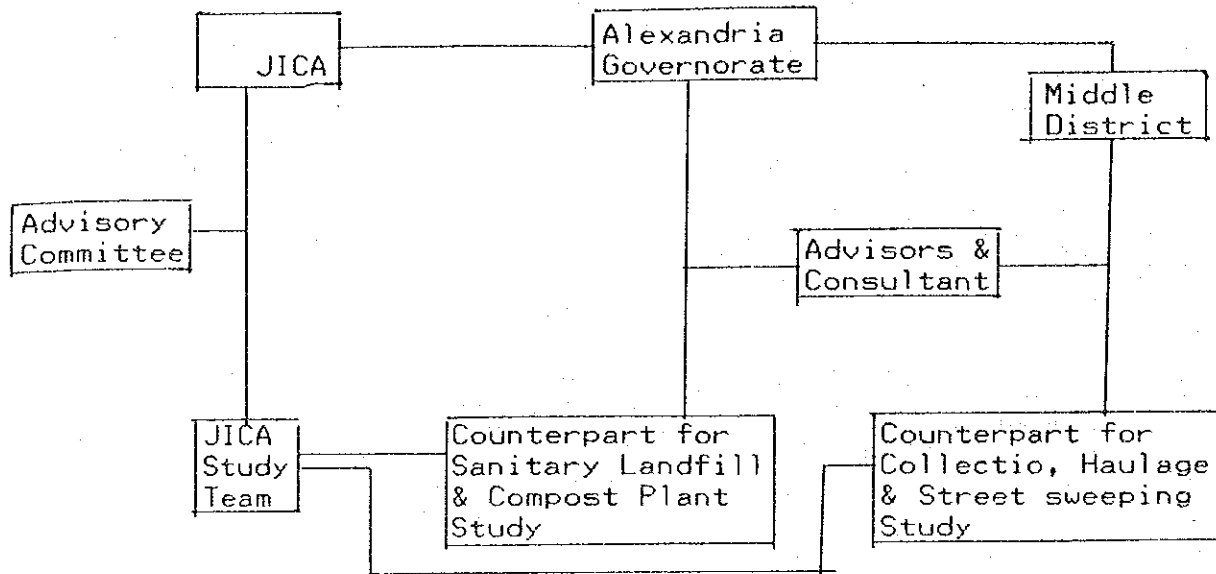
The following experts are necessary (on part time basis):

- a. 1 expert in organizational matter (the Governorate)
- b. 1 expert in finance (the Governorate)
- c. 1 expert in compost market study (Compost Plant Dept.)
- d. 1 expert in compost plant operation (Compost Plant Dept.)

Rev. S.R. / m

(3) The proposed organization for the Phase III Study

In order to execute the Phase III study efficiently, the following organization will be necessary:



2. Items to be provided

The Governorate will provide the following for the pilot study of collection, haulage and street sweeping.

(1) Collection vehicles, drivers and workers

- a. 2 collection vehicles
- b. 2 drivers
- c. 6 collection workers
- d. 10 - 20 sweepers

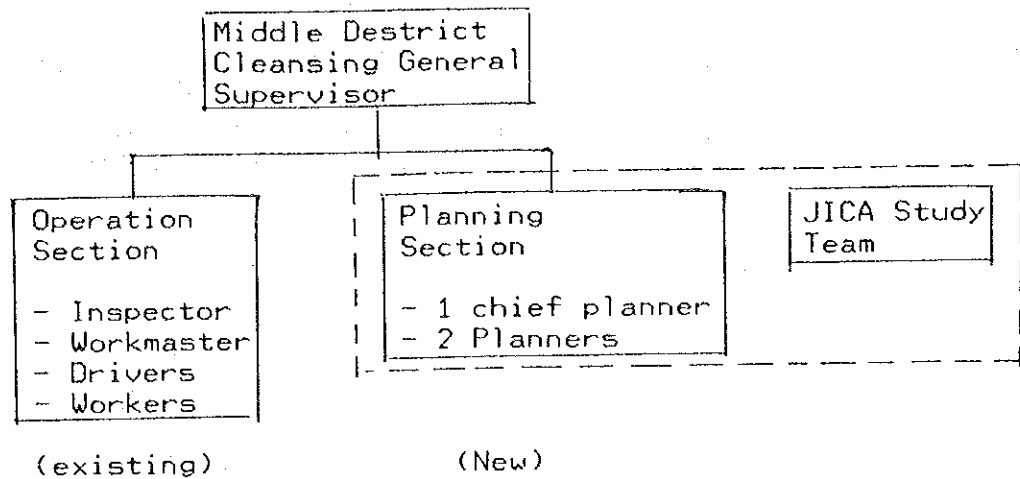
(2) Traffic survey report prepared by the Italian consultant in 1984

(3) Sign boards indicating 'WASTE STATION' to be placed at waste stations

(4) An additional office space for collection study team

(5) Planning unit consisting of 1 chief planner and 2 other planners. (We recommend this planning unit will remain as a permanent section in the Middle District Cleansing Dept as shown in the following chart.

Handwritten signature: H. M. S. R. /



3. Things to be arranged for study of compost

The Governorte will arrange the followings before the start of Phase III study:

- (1) Provision of the operation records of the existing Abist Compost Plant in respect of the following:
 - a. Amount of waste hauled to the Plant
 - b. Composition of waste hauled to the Plant
 - c. Recovery rate of compost and reusable materials
 - d. Composition of compost
 - e. Amount of rejects
 - f. Amount of utilities consumed such as water, electricity fuels.
 - g. Sales amount of compost and reusable materials
- (2) The wastes generated in the various areas will be used for pilot study in the existing Abis Compost Plant.
- (3) To decide on location of compost plants to be constructed.
- (4) To give JICA study team access to the future plant site so that JICA study team may carry out topographic and soil investigation.

P. S. R.

(5) To make necessary arrangement so that JICA study team can obtain cooperation of Ministry of Agriculture in respect of marketing survey of compost.

(6) To show organization scheme for management of compost plants.

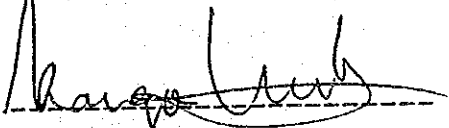
(attachment)

MINUTES OF MEETING FOR

THE FEASIBILITY STUDY ON
THE PLAN FOR REFUSE COLLECTION, TREATMENT AND DISPOSAL IN
ALEXANDRIA IN THE ARAB REPUBLIC OF EGYPT

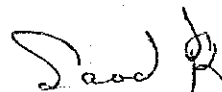
Alexandria, Egypt
7th October, 1985

For Japan International
Cooperation Agency

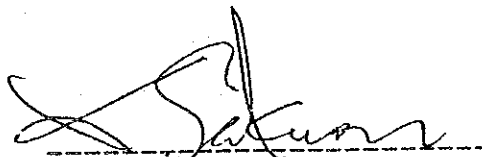


Kango Mito
Leader of JICA Study Team

For the Governorate of
Alexandria



Saad Rapheal
General Manager,
General Follow-up Dep.



Kunitoshi Sakurai
JICA Advisory Committee

A meeting was held on the 7th of October, 1985, between the concerned officials of the Alexandria Governorate (hereinafter referred to as <Egyptian Side>) and the members of the Advisory Committee and Study Team of Japan International Cooperation Agency (hereinafter referred to as <Japanese side>) to discuss matters concerned with the Progress Report II (hereinafter referred to as <Report II>) and principles in preparation of the Draft Final Report.

The following are the proceedings and the out-come of the meeting;

1. The Japanese side submitted 10 copies of the Report II to the Egyptian side.
2. The Japanese side explained the outline of the Report II.
3. Framework for Final Report Preparation

Through discussions both parties agreed upon, as follows;

(1) Alexandria Cleansing Authority

- 1- All the on-going studies will be carried out taking into consideration the establishment of the Cleansing Authority.
- 2- Outline of financial scale of the Authority shall be estimated as shown in the following table;

(unit 1000 LE)

Annual Expenditure		Annual Revenue	
Wages (for 3900)	5,050 (twice basic wage)	Financed by Central Gov.	2,800
Vehicles Maintenance	800	Cleansing Fund	1,500 - 2,000
Abis Plant Operation	450	Plastic bag sale	1,500 - 2,000
Space and Administration	500	Collection fee for commercial refuse	1,500 - 2,000
Investment	900 - 2,800	Compost. etc. sale	400 - 800
TOTAL	6,800 - (7,700 - 9,600)	TOTAL	7,700 - 9,600

3- To assure the annual revenue in the proposed budget the following measures will be applied:

- Collection charge will be 6.0 LE per year per family.
- Business establishments will be charged the same rate as residents but increased in proportion to discharging amount.

4- Central Workshop shall be attached to the Authority.

(2) Collection and Street Sweeping

1- The collection plan in the Middle District will be prepared according to the classification of area, designed waste amount in 2000, collection frequency, point and method, which are all defined in the Report II, chapter 3-1. Reloading method from small to big vehicles, will be decided after further detailed study and comparison between mechanical and manual systems by the JICA study team.

2- Principal system of street sweeping in the Middle District will be manual. The manual street sweeping plan in the Middle District will be made according to classification of streets, sweeping frequency, standard sweeping length per sweeper, and transfer method from push cart to collection vehicle, which are all defined in the Report II, chapter 3-1.

3- Mechanical sweeping system will be applied to some of the trunk roads, and type of mechanical sweeper will be decided after further study.

4- The new District garage and workshop presently under construction in Moharam Bey by the USAID will be taken into consideration.

5- Haulage plan to the quarry dump site will be provided with a simple type transfer station without compaction, of capacity 250 t/d located close to the New Compost Plant.

6- District garage shall belong to the district branch division of the Cleansing Authority.

(3) Dump Site

1- Sanitary landfill plan will be prepared for the Moharam Bey Square Dump Site.

2- The quarry sites located in Ameriyah District shall be used as future dump sites, as Moharam Bey Square Dump Site is expected to be out of use by the year 1990.

(4) Study and Evaluation of New Compost Plant

- 1- The capacity of the proposed New Compost Plant will be 300 ton/day in two 8-hour shifts daily.
- 2- The quantitative economic evaluation will be made for the New Compost Plant, and if benefits/costs (B/C) ratio exceeds one (1), the plant will be evaluated as feasible from the economic viewpoint.
- 3- The financial evaluation will be made on the assumption that the major funds necessary to construct the plant will depend on foreign loans with interest rate more than 4% per year.
- 4- In the economic and financial evaluation the exchange rate applied will be one (1) Egyptian pound equals US\$ 0.7518, the official rate as of October 1985.

(5) Master Plan of Solid Waste Management

The Master Plan will be modified in the Final Report according to the following conditions;

- 1- Moharam Bey Square Dump Site and Quarry Dump Site will be used by four (4) districts, namely Middle, Gomrok, West and Ameriyah, while East and Montazah Districts shall secure their own dump sites in other locations more suitable to them.
- 2- The capacity of compost plants to be considered will be 460 ton/day maximum, and the waste not received at these plants will be hauled directly to the dump sites and disposed of by sanitary landfilling.

Further expansion plan of compost plant will be studied, taking into account financial conditions, compost marketability and capability of securing future dump sites.

- 3- Organizational structure will be modified taking into consideration establishment of Cleansing Authority.

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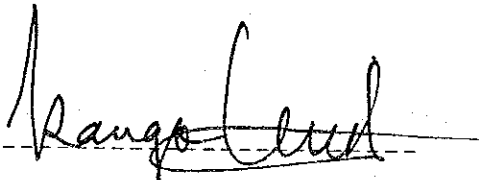
Mr Mahmoud-Saleh Riad

h.u. ES SR.

MINUTES OF MEETING
FOR
THE FEASIBILITY STUDY
ON
THE PLAN FOR REFUSE COLLECTION, TREATMENT AND DISPOSAL
IN
THE CITY OF ALEXANDRIA
OF
THE ARAB REPUBLIC OF EGYPT

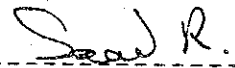
January 21, 1986
Alexandria, Egypt

For Japan International
Cooperation Agency

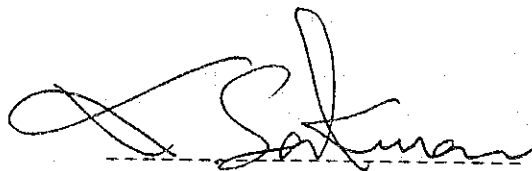


Kango Mito
Leader of JICA Study Team

For the Governorate of
Alexandria



Saad Rapheal
General Manager,
General Follow-up Dept.



Kunitoshi Sakurai
JICA Advisory Committee

SR

1- The JICA Study Team submitted to the Egyptian Counterparts twenty (20) copies of the Draft Final Report, consisting of Main, Summary, and Supporting Reports.

2- The Egyptian Counterparts inquired what countermeasures the JICA Study Team included in the basic design of the New Abis Compost Plant in order to avoid similar problems that the existing Abis Compost Plant is facing. JICA Study Team answered as follows;

(1) Feeding Hopper

2 units, Capacity $15\text{m}^3/\text{unit} \times 2 \text{ units} = 30\text{m}^3$

- Top level of feeding hopper is the same as the level of the reception stage.

- The collection vehicle can directly unload waste into the feeding hopper.

- Feeding by shovel loader can be reduced.

(2) Constant & continuous feeding of waste by feeder conveyor. Apron conveyor with a steep slope (40° - 45°) is employed as feeder conveyor so that big lumps of waste will fall down by gravity and gradually become loose while being carried by the apron conveyor. In addition, a rotating leveller is provided with the apron conveyor to ensure constant feeding to the picking line.

(3) Improvement of recovery rate for reusable and foreign material at the hand sorting line

- Constant and continuous feeding.

- Belt speed is set at 10m/min instead of 20m/min as in the existing plant, in order to form suitable thin layer of waste and also belt width is increased to 1.6m.

- Total length of picking line is designed to be twice that of the existing plant.

- An additional picking line with the same length is provided after pulverizing and classifying system.

(4) Countermeasures against easy tire puncture

- Cut resistance tire (CR Tire) having sufficient thickness is to be provided for the shovel loader. This thick "CR Tire" is very effective in minimizing punctures by nails, glass, iron pieces and so on.

- Tire chain made of rubber is also considered to be employed to avoid slip caused by scattered wastes.

H. Lee *S.P.*

- 3- The Egyptian Counterparts asked what the hourly treatment of the New Abis Compost Plant is. The JICA Study Team answered as follows;

Hourly treatment capacity (t/hr)

- (1) Working time per day : 16 hours
(8hr/shift x 2 shifts)
- (2) Actual operating time of plant: 14hr/day
- (3) Hourly plant capacity (normal) : 21.43t/hr
(300t/day÷14hr)
- (4) Hourly plant capacity (maximum) : 23.57t/hr
(21.43t/hr x (1+*))

5 liter = 2.27 gal
6 liter { 2.27 gal
17.7 gal
24 liter

where *= allowance for load fluctuation (10%)

- 4- The Egyptian Counterparts requested clarification of the connection between the Master Plan and the Feasibility Study. The JICA Study Team explained that from the national economic point of view it was necessary to study feasibility of introducing a composting plant of limited capacity in addition to the existing Abis Compost Plant, although it was concluded in the Master Plan that Alternative 2 (full sanitary landfilling) is the least cost one.
- 5- The Egyptian Counterparts requested that all the conclusions of the three individual projects of the Feasibility Study be summarized into one section. The JICA Study Team prepared the following section to be included in the Final Report;

4.5 Conclusion

The evaluation of s.w.m. improvement project without New Abis Compost Plant Project (i.e. Waste Collection Improvement Project and Waste Disposal Improvement Project) indicated that the s.w.m. improvement project is technically, economically and financially feasible. On the other hand, New Abis Compost Plant Project when considered alone, is not financially feasible while technically and economically feasible.

However the s.w.m. improvement project with New Abis Compost Plant Project (i.e. all three projects combined) is financially feasible when the charge collection system as described in the previous section is guaranteed.

to be S.R.

- 6- The Egyptian Counterparts submitted a copy of the actual operation records of the Abis Compost Plant to the JICA Study Team for the period of September to December 1985. The JICA Study Team accepted the Egyptian Counterparts' request that these records be included in the Final Report.
- 7- The Final Report shall be prepared taking into account the opinions exchanged in the meetings held between the Egyptian Counterparts and the JICA Study Team on the 20th and 21st of January 1986.
- 8- The Egyptian Counterparts informed the JICA Study Team that they had submitted to the Ministry of Planning and International Cooperation a request for grant aid for the execution of the Collection and Haulage Improvement Project and the Sanitary Landfilling Project.
- 9- An Arabic version of the Main Draft Final Report will be prepared by the consultant for this study (Yachiyo Engineering Co., YEC) at their own expense. However, the Arabic version shall be exclusively for unofficial use and JICA bears no responsibility for its contents. Moreover, the preparation of an Arabic version by YEC should not be used as a precedent for future JICA studies.
- 10- Considering the importance of human resource development for the improvement of s.w.m., Egyptian Counterparts wished to be given opportunities for training their personnels in Japan.
- 11- Any further comments from the Egyptian counterparts on the Draft Final Report shall be sent to JICA Cairo Office no later than the 15th of February, 1986. After being checked by the JICA Study Team the comments may be incorporated in the Final Report.

R.M. SR.

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JICA