

5. 討議議事録 (M/D)

(1) 基本設計調査時

MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT OF SUPPLYING EQUIPMENT
FOR NEW LANDFILL SITE OF MADONA-GHABAWI
IN THE HASHEMITE KINGDOM OF JORDAN

Based on the results of the Preliminary Study, the Government of Japan decided to conduct a Basic Design Study on THE PROJECT OF SUPPLYING EQUIPMENT FOR NEW LANDFILL SITE OF MADONA-GHABAWI (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to THE HASHEMITE KINGDOM OF JORDAN (hereinafter referred to as "Jordan) the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Shinsaku Fukazawa, Water and Sanitation Team, Project Management Group I , Grant Aid Management department, and is scheduled to stay in the country from June 13, to July 9, 2004.

The Team held discussions with the officials concerned of the Government of the Jordan and conducted a field survey at the study area.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Amman, June 17, 2004

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Shinsaku Fukazawa

Leader

Basic Design Study Team

Japan International Cooperation Agency

Japan

H. Zaki

Dr. Hussein Zaki Said

Under Secretary Assistant for Health
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Municipality of Greater Amman

The Hashemite Kingdom of Jordan

ATTACHMENT

1. Objective of the Project

The objective of the Project is to improve the capacity for solid waste management through supplying equipment for operation of new Madona-Ghabawi landfill site, and vehicles for smooth collecting and transportation of solid waste in Greater Amman city.

2. Project sites

The Project sites are Greater Amman city and surrounding areas consisting of a part of Zarqa, Balqa and Madaba Governorates including refugee camps as shown in Annex- I .

The operation area of the requested collection vehicles and transfer station equipments is Greater Amman city.

Madona-Ghabawi landfill where the requested dumping machinery and solid waste disposal machinery are operated receives solid waste from a part of Zarqa, Balqa and Madaba Governorates besides Greater Amman city.

3. Responsible and Implementing Agency

3-1. The Responsible Agency is Ministry of Planning.

3-2. The Implementing Agency is Municipality of Greater Amman (MOGA).

4. Items requested by the Government of Jordan.

After discussions with the Team, the items described in Annex- II were finally requested by the Jordanian side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

5. Japan's Grant Aid Scheme

The Jordanian side has understood the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of the Jordan as explained by the Team and described in Annex-2 and Annex-3 of the Minutes of Discussions signed by both parties on the 4th of March 2004.

6. Schedule of the Study

6-1. The consultant members of the team will proceed to further studies in Jordan until July 9, 2004.

6-2. JICA will prepare a draft report in English and dispatch a mission in order to explain its contents in September 2004.

6-3. In case that the contents of the report are accepted in principle by the Government of Jordan, JICA will complete the final report and send it to the Government of Jordan by November 2004.

7. Other relevant issues

7-1. Both side agreed that the target year of the Project is 2010. Therefore design population and

design generated waste amount for the Project shall be set for the year 2010.

7-2. Both side agreed that the target of the waste collection rate of the project site is 95% by the target year.

7-3. Both side agreed that the Jordanian side shall secure the spare parts with their own budget for the vehicle and equipments provided under the Project, in case that the Project is implemented.

7-4. The Jordanian side explained to the Team that the construction plans of the new transfer stations as attached in Annex-III. The Jordanian side also explained that they will fix the place of the three new transfer stations and inform the Team not later than 8th of July, 2004. The Japanese side confirmed the explanation of the Jordanian side.

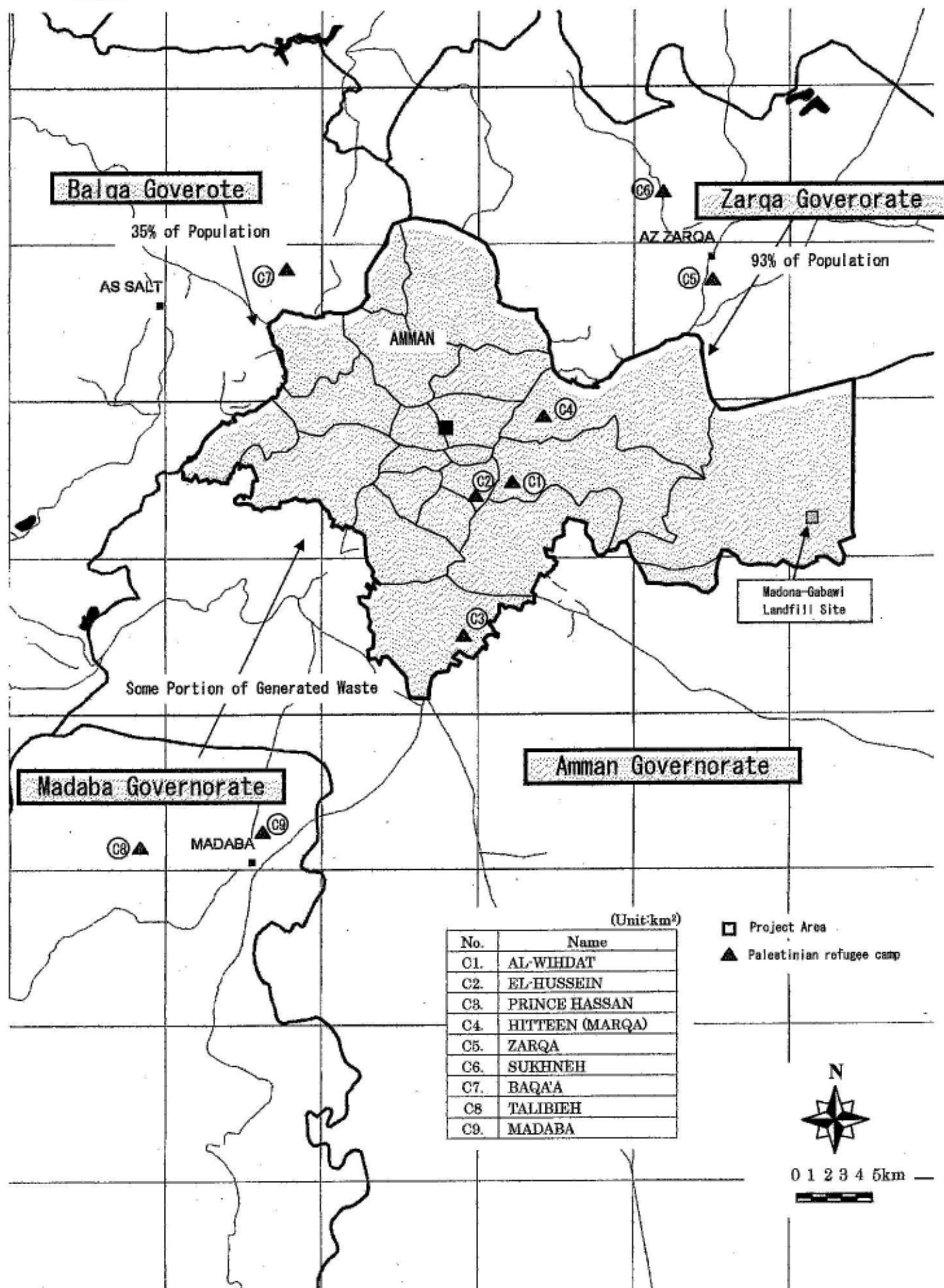
7-5. The Jordanian side explained that the operators of the new transfer stations and drivers of the procured vehicles should be secured by redeployment of staff within MOGA. The Japanese side confirmed the explanation of the Jordanian side.

7-6. The Jordanian side explained the monitoring plan at the Madona-Ghabawi landfill site as attached in Annex-IV. The Japanese side confirmed the explanation of the Jordanian side.

7-7. The Jordanian side explained that the construction of the leachate treatment facility at the Madona-Ghabawi landfill site will be built before October 2004 as shown in Annex-III. The Japanese side confirmed the explanation of the Jordanian side.

7-8. The Jordanian side explained that the construction plan of second cell of the Madona-Ghabawi landfill site is as shown in Annex-III and the Japanese side confirmed that the Jordanian side will secure the budget for the construction.

Annex I



Annex-II

Requested Items

Classification	Items	Specifications or Equivalence	Initial Request
Waste Collection Vehicle	- Inter City Medium Size Compactor - Inter City Large Compactor	4 - 8 m ³ 8 - 16 m ³	20 10
Transfer Station Vehicle	- Long Shassis Compacting Trainl - Tractor Head for Trail	30 - 50m ³	8 6
Equipment for Final Landfill Site	<u>Garbage Disposal Machinery</u> - Bulldozer (Small) - Bulldozer (Middle) - Landfill Compactor - Wheel Loader - Dozer Shovel - Backhoe	180 HP 220 HP 30 - 40 Ton 215 HP + Bucket 135 HP + Bucket 125 HP	2 2 1 3 2 2
	<u>Soil Excavation Machinery</u> - Bulldozer (Large) - Motor Grader - Vibratory Roller	320 HP 155 HP 133 HP	1 1 1
Vehicle for Operation and Maintenance	- Water Tanker (Sprinkler truck) - Double Cab Pick Up - Dump Truck - Passenger Bus for the Landfill Staff - Mobile Workshop	6 - 8 m ³ 8 - 10 m ³ 20 Seat Alminum Van Body, 4 x 4, 9 ton	3 2 6 1 1

Ref.

Date 16/6/2004

To :

JAPAN INTERNATIONAL COOPERATION AGENCY(JICA)
BASIC DESIGN TEAM
YACHIYO ENGINEERING CO. , LTD.

As you noticed during our discussion that Greater Amman Municipality annual total budget is above 95 million J.D (J.D is eq. 1.3 U.S Dollar), which gives the Municipality the ability to continue its Global solid waste management system.

So the Municipality is committed strongly to finance the following :-

1) **Design conditions :-**

To continue and finance the conditions after the target year 2010 of the project, and set the population design and waste, generation of solid waste amount and to maintain the collection ratio 95% . In addition to other items, like soil covering ratio not less than 10% of volume of waste disposed and vehicles and equipment ratio .

2) **Transfers station :-**

As agreed before the Municipality is committed to build up and operate three transfer station in the suitable areas in Amman. At the moment, the land possession under ongoing process. which will followed by design, construction and operation.

The proposed areas for transfers stations as following :-

- 1- Yagus station (Al- Jabuha district).
- 2- Wadi Al-sir ,two land position understudy at this moment .
- 3- Al Ruseifeh area (Between three major cities Amman, Balgaa and Al Zarka city .
- 4- Abdoun station (Zahran district)

Our proposed schedule to construct three out of them will be less than one year from now and after MOGA technical team will complet their design.

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3) **The second cell construction :-**

As mentioned during our discussion about the flexibility of the capacity of operating first cell design and its life span to continue receiving solid waste for more than two years. So Municipality is committed to finance and construct the second cell. on early 2006 from its budget.

4) **The second cell construction :-**

As mentioned during our discussion about the flexibility of the capacity of operating first cell design and its lifespan to continue receiving solid waste for more the two years. So Municipality is committed to finance and construct the second cell . On early 2006 from its budget.

5) **Leachate treatment facility :-**

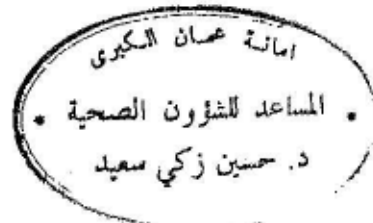
Refer to the design of Ghabawi landfill and Environment impact assessment the MOGA is committed to build a Leachate treatment plan at site before October 2004

Thank you.

Dr. Hussein Zaki

H. Zaki

Under Secretary Assistant For
Health & Environmental Affairs





بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ
أمانة عمان الكبرى

Municipality of Greater Amman



Ref.

Date 16/6/2004

To :

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
BASIC DESIGN TEAM
YACHIYO ENGINEERING CO., LTD.

*Attached with this letter a proposed monitoring report.
Which is now under ongoing discussion with one of Jordan
universities to do a contract and regular schedule for
monitoring Ghabawi operation process.*

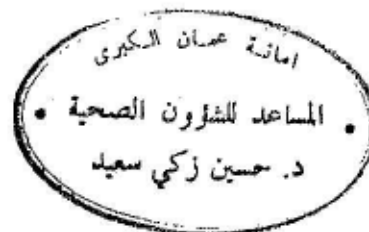
*This will be completed according to EIA report and other
local and international standards in the future, before the end of
this year 2004.*

Thank you.

Dr. Hussein Zaki

H. Zaki

Under Secretary Assistant For
Health & Environmental Affairs



Ref.

Date

ENVIRONMENTAL MONITORING PLAN FOR ALGHABAWY LANDFILL OPERATIONS

Environmental monitoring refers to periodic inspections and testing performed to assess impacts of the Alghabawi landfill on its surrounding environment.

Environmental monitoring plan should cover the following elements:

1. Groundwater quality.
2. Gaseous emissions.
3. Erosion and sedimentation and soil quality.
4. Noise level
5. Leachate treatment.

1. Groundwater Quality

Groundwater quality monitoring serves two purposes:

1. to demonstrate that the landfill is not causing significant degradation of groundwater
2. to evaluate the character, magnitude and extent of contamination, in case such contamination takes place.

To achieve a continuous monitoring of the groundwater, usually groundwater wells are drilled within and around the site area at the upgradient and downgradient of the site. As for Alghabawi site, there is a monitoring at the upgradient side of the site that is excavated at the time of hydrogeological survey evaluation of the site. This well along with the existing wells in the nearby farm can be used as monitoring wells.

Groundwater quality sampling and testing should be performed at intervals throughout the year. Sampling times should be adjusted so as to account for possible variations in water quality related to seasonal fluctuations in the rainfall. The following water quality parameters are common indicators of possible contamination

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by landfill leachate. It is recommended that groundwater samples be collected and analyzed for these constituents at least three times per year.

- pH
- Total dissolved solids
- Alkalinity
- BOD
- COD
- Chlorides
- Manganese
- Nitrate / Nitrite nitrogen
- Total Kjeldhal nitrogen
- Iron
- Sodium
- Sulfate

Analysis for the following parameters should be included in the groundwater quality testing program and should be carried out for at least once a year:

- Arsenic
- Barium
- Cadmium
- Chromium
- Lead
- Total phenols
- Volatile organic compounds

Monitoring results should be compared with The Jordanian Standards of wastewater discharge for groundwater recharge.

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2. Gaseous Emissions

Jordan is lacking specific air quality regulations and allowable emissions levels for land disposal facilities. However, the ambient air quality standards from stationary sources can be utilized for the purpose of monitoring and control. As for AlGhabawi landfill, two aspects of gaseous emissions should be considered, namely, odors and methane emissions, regardless of the regulatory status.

For the most part odors should be monitored through the awareness of the landfills workers and by attending to the complaints of neighboring property owners. If odors should become a continuous problem for the affected parties, then problem should be resolved even if that requires the adjustment of landfill operating method.

Land fill gas migration, on the other hand, requires monitoring and assessment. The need for gas migration monitoring derives from the fact that it is flammable and explosive above certain concentration, due to the presence of methane gas. Therefore, the purpose of gas migration is to ensure that landfill does not migrate to and accumulate in on-site structure or to off-site location in a concentration that are hazardous to human health or property.

The landfill gas should be controlled so as to keep within the following limits:

- 100% of the lower explosive limit (LEL) at the property boundary of the facility
- 25% of the LEL in any structure within the landfill facility.

LEL is equivalent to a concentration of 5% methane in air. It should be measured by the use of field- portable combustible gas indicator at various

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distances from the landfill area. The measurement frequency should be at least three times a year.

3. Erosion and Sedimentation (Soil quality)

At any time during the operation of the landfill, large areas of disturbed land likely will be exposed. Thus, the potential exists for substantial problems associated with erosion and sediment deposition if proper control measures are not applied at the landfill site.

Environmental monitoring should include periodic inspection of the landfill surface and drainage systems for indications of excessive erosion or sediment deposition. Sediments that are deposited in drainage channels should be removed promptly. All ponds at the site should be cleaned out from time to time to maintain their design level of performance. Natural waterways that receive runoff from landfill site should be monitored frequently and after each major storm event for any signs of sediments deposition.

4. Noise level

With the advancement in the landfilling operations at Al Ghabawi, it is expected that the noise levels will be increased. Therefore, it is recommended to put down a monitoring plan to measure the noise once a month on-site and off-site nearby the residential areas on the highway leading to the landfill. The objective of this monitoring is to ensure that noise levels are within the allowable limits both within site and on the highway to the site.

5. Leachate treatment

- Although a good capping system will be implemented, usually Leachate will continue to be generated from landfills after the closure.

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Thus it will be necessary to collect and treat the produced Leachate as it may poses a threat to the groundwater quality.

- The Ghabawi design include a leachat treatment plant, which depend on the high evaporation rate in the area attach with this report the design of this plant.

Japan's Grant Aid

The Grant Aid scheme provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

Grant Aid Procedures

Japan's Grant Aid Scheme is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet of Japan)
Determination of Implementation	(The Notes exchanged between the Government of Japan and the Recipient Country)

Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Ministry of Foreign Affairs, the Government of Japan to determine whether or not it is eligible for the Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request.

Secondly, JICA conducts the Basic Design Study, using a Japanese firm.

Thirdly, The Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid program, based on a report of the Basic Design Study prepared By JICA, the results are then submitted to the Cabinet of Japan for an approval.

Fourthly, the project once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Government of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such manner as preparing tenders, contracts and so on.

Basic Design Study

Contents of the Study

The aim of the Basic Design Study(hereinafter referred to as "the Study") conducted by JICA on a requested project(hereinafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows;

- Confirmation of the background, objectives, and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for implementation of the Project.
- Evaluation of the appropriateness of the project to be implemented under the Grant Aid Scheme from a technical, social and economical point of view.
- Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- Preparation of a basic design of the Project.
- Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design Study of the Project is confirmed considering the guideline of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the project. Such measures must be guaranteed even though they may fall outside of jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

Selection of Consultants

For smooth implementation of the Study, JICA uses a registered consultant firm. JICA selects a firm based on proposals submitted by interested firms. The selected firm carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consultant firm(s) used for the Study is recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

Japan's Grant Aid Scheme

(1) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditioned and amount of the Grant Aid, etc., are confirmed.

(2) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed. However, in case of delay in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

(3) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products and services of a third country.

However the prime contractors, namely consulting constructing and procurement firms, are limited to "Japanese nationals". (The terms "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

(4) Necessary "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

(5) Undertakings required to the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is requested to undertake such necessary measures as the followings;

- 1) To secure land necessary for the sites of the project and to clear level and reclaim the land prior to commencement of the construction.
- 2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- 3) To secure buildings prior to the procurement in case the installation of the equipment.
- 4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
- 5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the verified contracts.
- 6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of the work.

(6) "Proper Use"

The recipient country is required to operate and maintain the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(7) "Re-Export"

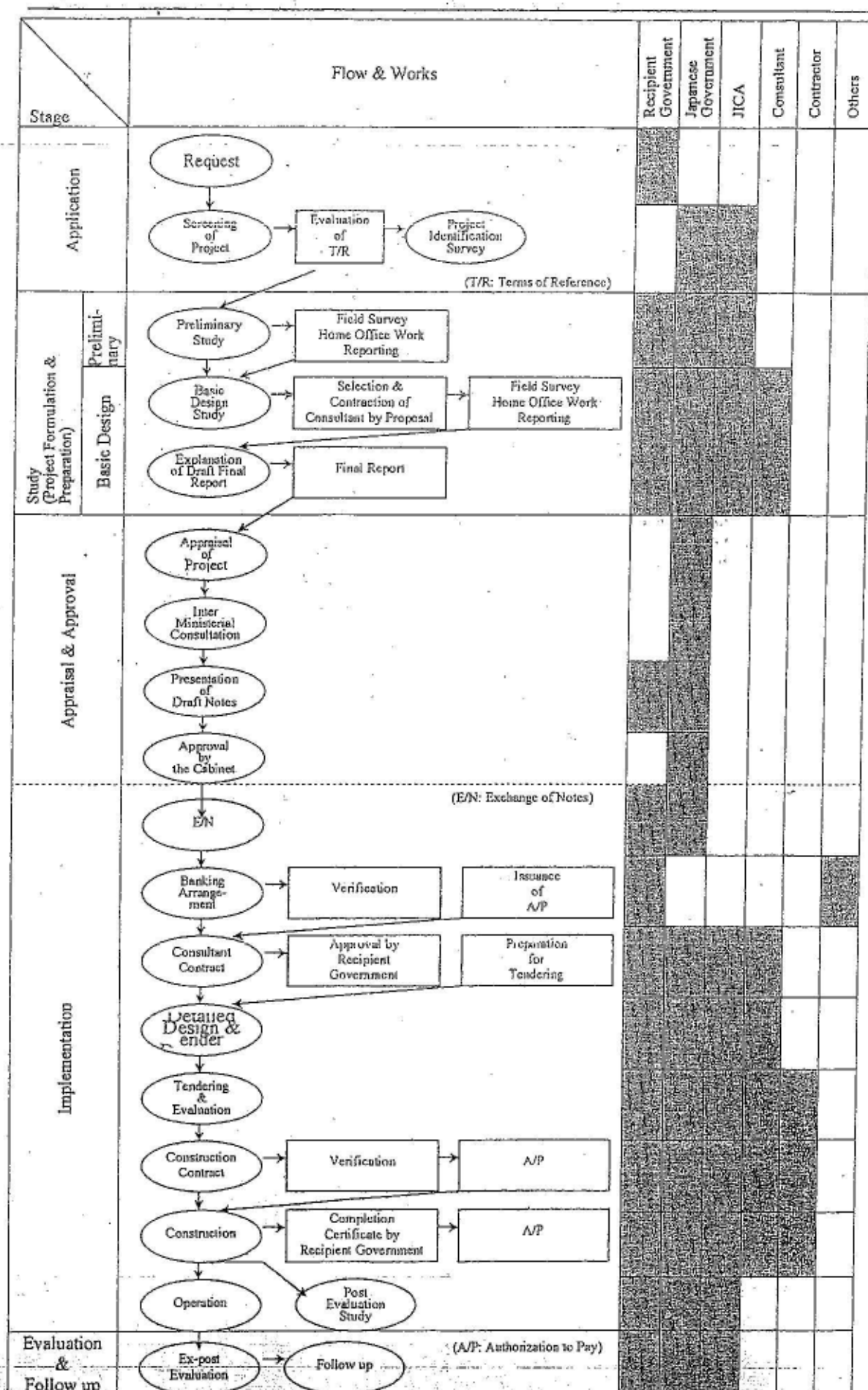
The products purchased under the Grant Aid should not be re-exported from the recipient country.

(8) Banking Arrangement(B/A)

- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan(hereinafter referred to as "Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under verified contracts.
- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay(A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.



Flow Chart of Japan's Grant Aid Procedures

ANNEX-3: Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To bear the following commissions to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
2	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan the recipient	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
3	To accord Japanese nationals, whose service may be required in connection with the supply of the products and the services under the verified contract, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
4	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts		●
5	To maintain and use properly and effectively the facilities contracted and equipment provided under the Grant Aid		●
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment		●