

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

DIRECTORATE GENERAL OF HUMAN SETTLEMENTS  
MINISTRY OF PUBLIC WORKS  
AND  
JAKARTA WATER SUPPLY ENTERPRISE

THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT

FINAL REPORT

Volume 3

ANNEX (1)

MAY 1997

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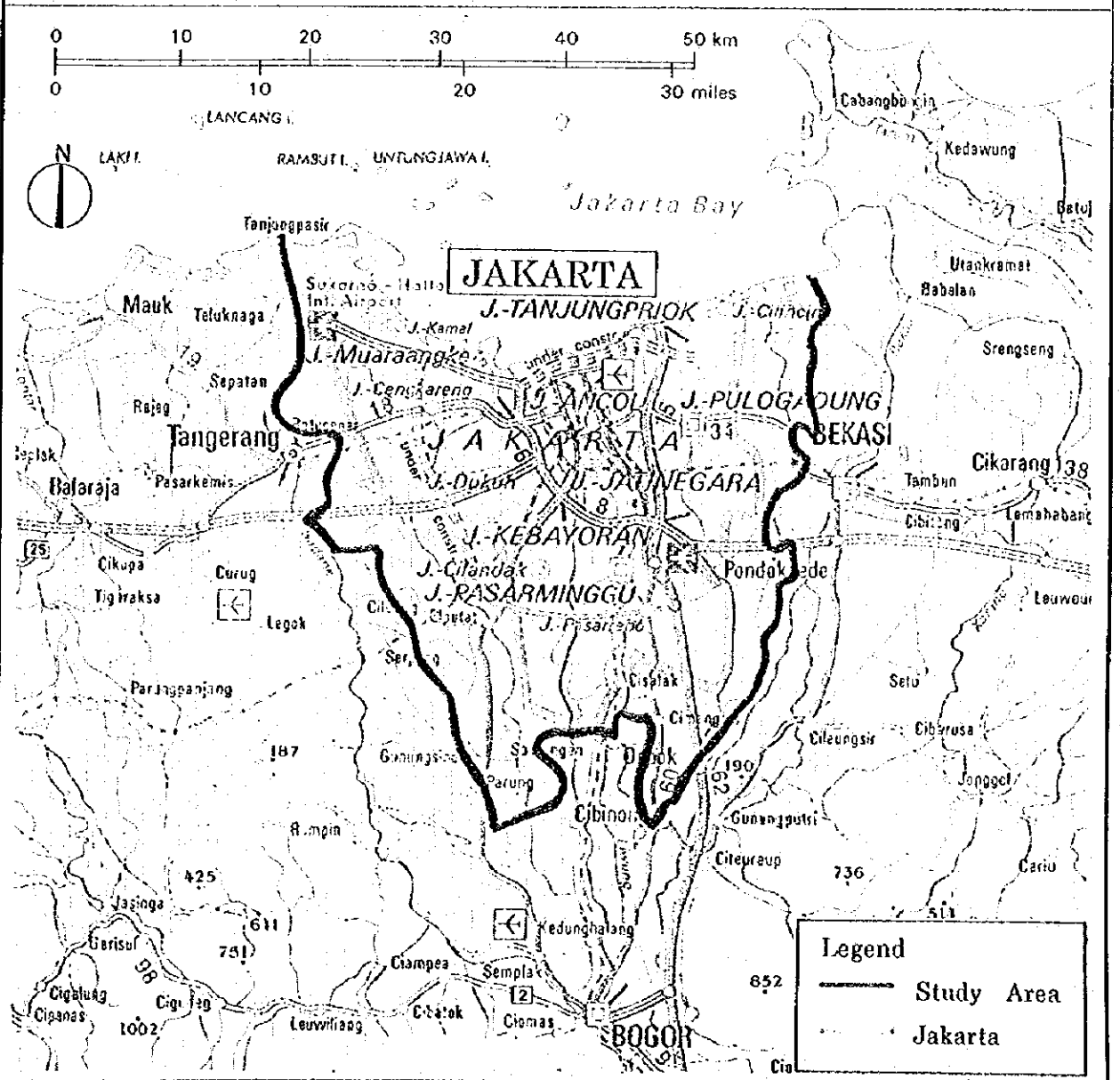
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**GENERAL LOCATION MAP OF STUDY AREA**



DIRECTORATE GENERAL OF HUMAN SETTLEMENTS  
MINISTRY OF PUBLIC WORKS  
AND  
JAKARTA WATER SUPPLY ENTERPRISE

**FINAL REPORT**  
OF  
THE STUDY ON  
THE REVISE OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT

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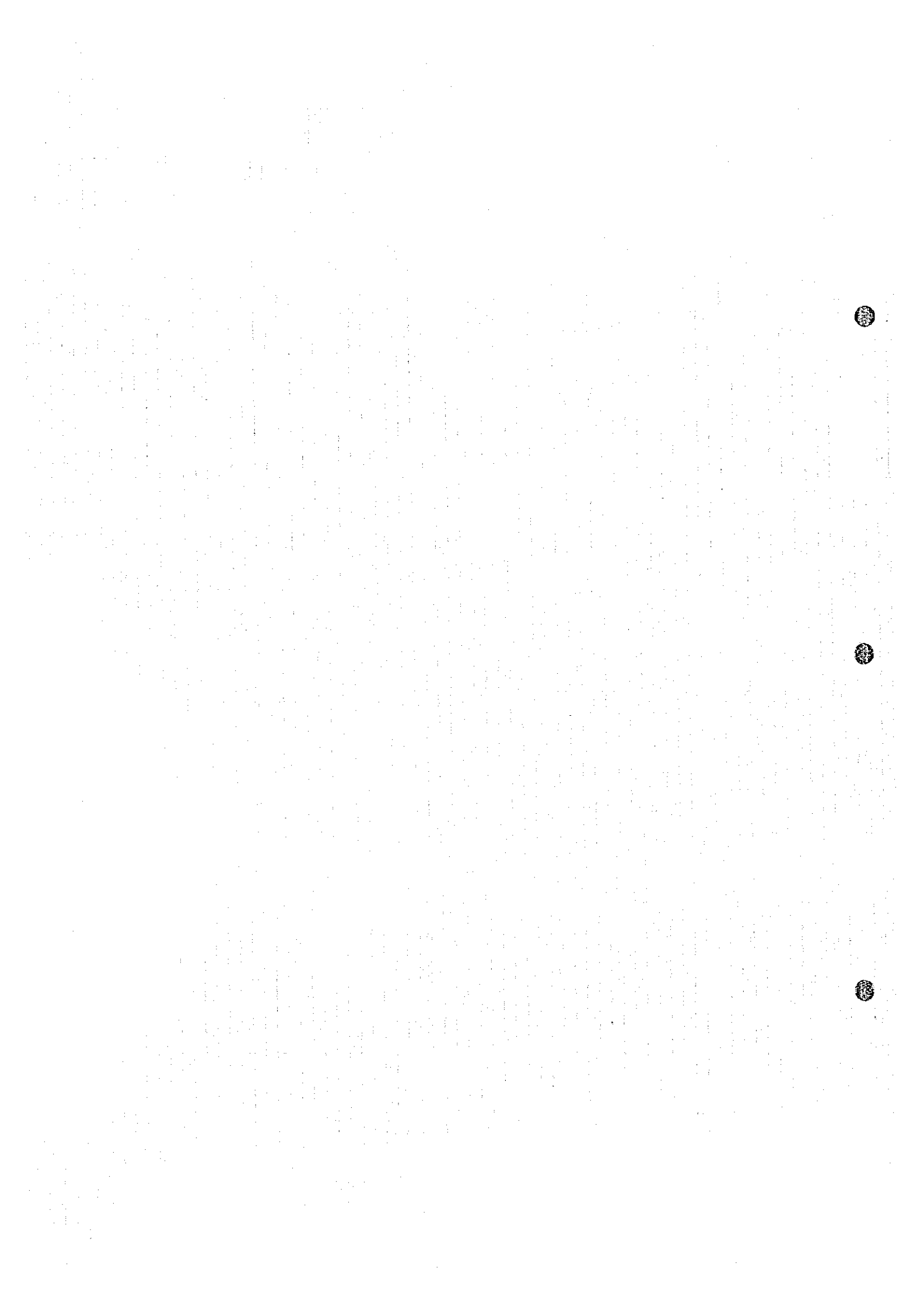
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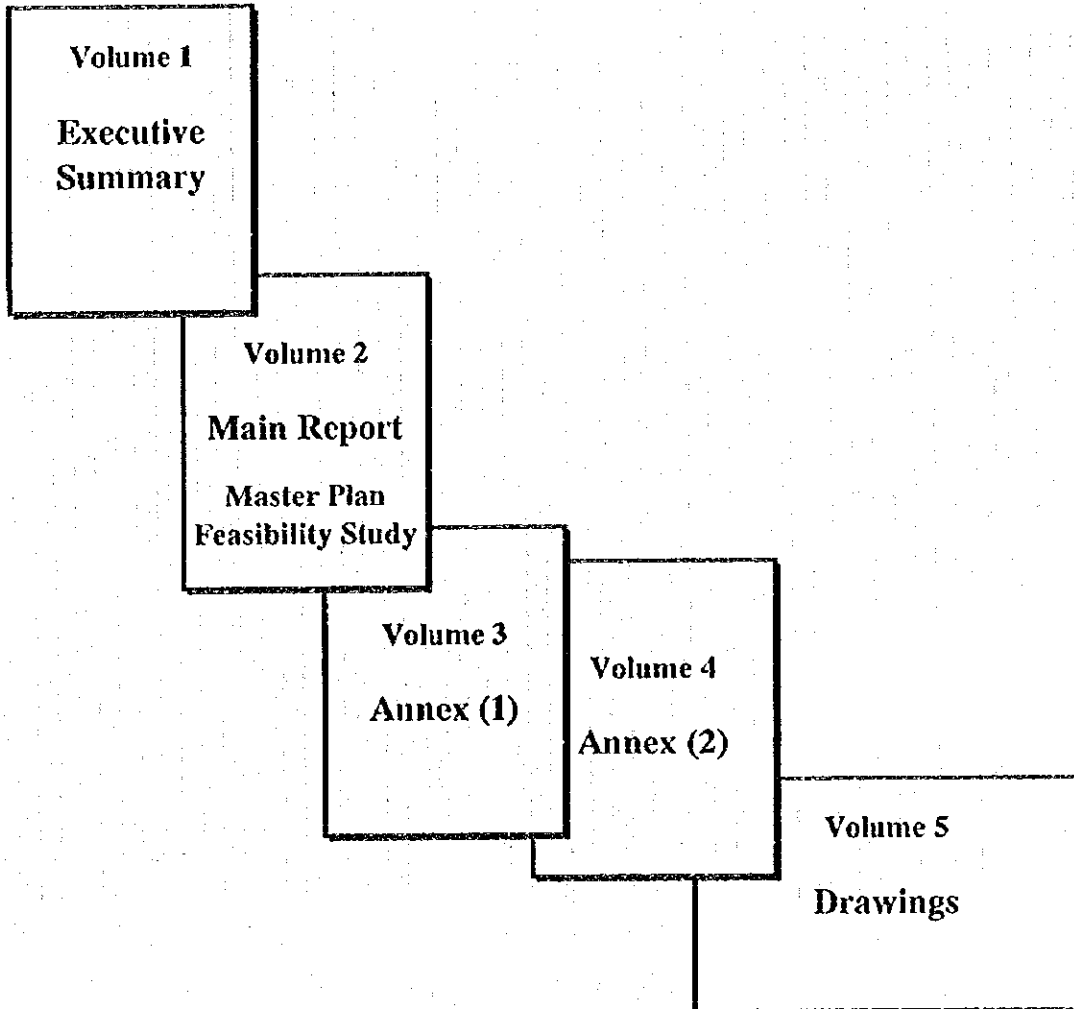


## ABBREVIATIONS

BAPEDAL	Badan Pengendalian Dampak Lingkungan Environmental Impact Management Agency
BAPPENAS	Badan Perencanaan Pembangunan Nasional National Development Planning Board
BOOT	Build Own Operate Transfer
BOTABEK	BOgor, TAngerang and BEKasi
Cabang	Branch (of an organization)
Cipta Karya	Directorate General of Human Settlements, MPW
Daerah	A region
DGWRD	Directorate General of Water Resources Development (within MPW)
DJCK, DGHS	Direktorat Jenderal Cipta Karya Directorate General of Human Settlements (within MPW)
DKI	Daerah Khusus Ibu Kota Indonesia City of Jakarta (Special Capital District of Jakarta)
EIA	Environmental Impact Assessment
GOI	Government of Indonesia
GOJ	Government of Japan
GRDP	Gross Regional Domestic Product
HRD	Human Resources Development
IBRD	International Bank for Reconstruction and Development (The World Bank)
IEE	Initial Environmental Examination
JABOTABEK	JAKarta, BOgor, TAngerang and BEKasi
JICA	Japan International Cooperation Agency
JMDPR	JABOTABEK Metropolitan Development Plan Review
JUDP	JABOTABEK Urban Development Project
JWRMS	JABOTABEK Water Resources Management Study
JWSDP-MP	Jakarta Water Supply Development Project (Master Plan)
JWSSP	Jakarta Water Supply Sector Project
Kabupaten	District-administrative subdivision of a province
Kecamatan	District-administrative subdivision of a kabupaten
Kelurahan	District-administrative subdivision of a kecamatan
KEPPRES	Keputusan Presiden, Presidential Degree
MOF	Ministry of Finance
MOH	Ministry of Health
MOHA	Ministry of Home Affairs
MOU	Memorandum of Understanding
MPW	Ministry of Public Works
NRW	Non-Revenue Water
NWSSP	National Water Supply Sector Project
OECD	Overseas Economic Cooperation Fund, Japan
PAM JAYA	Jakarta Water Supply Enterprise
PC	Primary Cell (Water Distribution Network)
PDAM	Perusahaan Daerah Air Minum, Local Government Water Enterprise

PDM	Primary Distribution Main (Water Distribution Network)
PERUMNAS	Perumahan Nasional, National Housing Authority
PIU	Project Implementation Unit
PJSIP	PAM JAYA System Improvement Project
POJ	Perum Otorita Jatiluhur
PSP	Private Sector Participation
S/W	Scope of Works
TOR	Terms of Reference
UFW	Unaccounted-For Water
USAID	US Agency for International Development
Wilayah	Area or region
WTC	West Tarum Canal
WTP	Water Treatment Plant

The Study on the Revise of  
Jakarta Water Supply Development Project  
**Compilation of the Report**



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**ANNEX-M/M**

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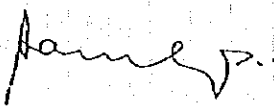
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THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF INDONESIA

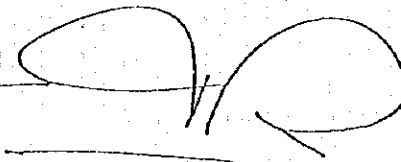
AGREED UPON BETWEEN

DIRECTORATE GENERAL OF HUMAN SETTLEMENTS,  
MINISTRY OF PUBLIC WORKS,  
JAKARTA WATER SUPPLY ENTERPRISE,  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY

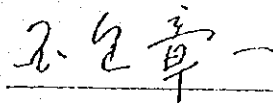
Jakarta, 10 February, 1995



Rachmadi B. S.  
Director General of  
Human Settlements,  
( Cipta Karya )  
Ministry of Public Works



H. Syamsu Romli  
President Director,  
Jakarta Water Supply  
Enterprise  
( PAM JAYA )



Dr. Shoichi KUNIKANE  
Leader,  
Preparatory Study Team,  
Japan International  
Cooperation Agency

In response to the request of the Government of the Republic of Indonesia, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Study Team (hereinafter referred to as "the Team") headed by Dr. Shoichi KUNIKANE to Indonesia from February 1, 1995, to discuss the Scope of Work for the Study on the Revise of Jakarta Water Supply Development Project in the Republic of Indonesia (hereinafter referred to as "the Study").

The Team carried out the field surveys of the areas covered by the Study, and had a series of discussions with the Indonesian authorities concerned such as the Directorate General of Human Settlements, Ministry of Public Works (hereinafter referred to as "Cipta Karya") and Jakarta Water Supply Enterprise (hereinafter referred to as "PAM JAYA").

This document sets forth the main items discussed.

1. Both sides agreed to change the name of the Study from the requested name "the Review of the Water Supply Master Plan of the City of Jakarta" to "the Study on the Revise of Jakarta Water Supply Development Project" because the purpose of the Study is to revise the master plan of 1985, and the name of the previous study is "the Study on Jakarta Water Supply Development Project".
2. Both sides confirmed that "the request" mentioned at the beginning of "1. INTRODUCTION" of the Scope of Work (hereinafter referred to as "the S/W") was officially submitted from the Government of the Republic of Indonesia to the Embassy of Japan on March 8, 1994.
3. The Indonesian side requested that the Japanese study team (hereinafter referred to as "the Study Team") should take the existing and on-going studies/projects into consideration in preparing the reports of the Study. The Team accepted the request.
4. The Team requested that the Indonesian side should inform the Study Team of the result of the existing and on-going studies/projects in the course of the Study. The Indonesian side accepted the request.



5. Both sides agreed that the review of the present conditions should be mainly conducted based on the existing data and documents, and supplemental field measurements would be conducted, if necessary.
6. Both sides confirmed that the water supply plan of Kepulauan Seribu (the Thousands Islands) in DKI Jakarta would be studied through the review of the present situation in a few typical islands, and alternative plans would be proposed.
7. With respect to "Phase II" of "IV. SCOPE OF THE STUDY" of the S/W, both sides confirmed that adequate attention should be paid to private sector involvement in the feasibility study along with the result of the master plan study.
8. With respect to "9. Environmental Impact Assessment (EIA)" of "Phase II" of "IV. SCOPE OF THE STUDY" of the S/W, both sides confirmed that the Indonesian side shall receive the approval of TOR of Environmental Impact Analysis (AMDAL) from Environmental Impact Assessment Commission of the Ministry of Public Works (Komisi Pusat AMDAL). The Study Team shall prepare the draft AMDAL report, monitoring environment plan, and management environment plan.  
And the Indonesian side shall present the result of AMDAL study to the Komisi Pusat AMDAL and receive the approval of the AMDAL study.
9. Both sides agreed that, at each time of report submission, the Study Team would explain its contents and exchange opinions with the Indonesian side.
10. Both sides agreed to organize a steering committee and a technical team to formulate the basic policy of the Study and to deal with technical matters, respectively. The committee and the team shall be composed of the representatives of concerned agencies as follows:

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## a) Steering Committee

Chairman; Director General of Cipta Karya

Members ; National Development Planning Board (BAPPENAS)

Diretorate General of Public Administration and Regional

Autonomy, Ministry of Home Affairs (DG PUOD)

Ministry of Finance

Regional Development Planning Board (Bappeda) of DKI Jakarta

PAM JAYA

## b) Technical Team

Chairman; PAM JAYA

Members ; BAPPENAS

DG PUOD

Cipta Karya

Ministry of Finance

Ministry of Health

Bappeda DKI Jakarta

11. The Team requested to the Indonesian side to furnish an office of enough space for at least ten (10) staff with necessary equipment for the Study Team. The Indonesian side accepted the request.
12. The Team requested to the Indonesian side to assign necessary counterpart personnel. The Indonesian side accepted the request. The counterpart personnel will be identified by the time of submitting Inception Report.
13. The Team requested to the Indonesian side to provide necessary vehicles for the conduct of the Study. The Indonesian side answered that it was not possible to provide them for financial reasons.
14. With respect to 2. of "VIII. UNDERTAKING OF JICA" of the S/W, the Indonesian side requested to accept counterpart personnel for the training in Japan during the Study. The Team promised to convey the request to the JICA Headquarters.

A list of attendants to the meeting is shown in the attached paper.

*J. T. R.*

LIST OF ATTENDANTS

- |                                                       |                                                                                    |
|-------------------------------------------------------|------------------------------------------------------------------------------------|
| 1. Cipta Karya                                        |                                                                                    |
| Ir. Rachmadi B. S.                                    | Director General                                                                   |
| Ir. Hari Sidharta Dipl. HE                            | Director of Technical Development                                                  |
| Ir. Risyana Dipl. H                                   | Sub Director of Water Supply                                                       |
| Ir. Irman Djaya Dipl. SE                              | Chief of Central Region Technical Development                                      |
|                                                       | Section, Sub Directorate of Water Supply                                           |
| Ir. Djoko Mursito Dipl. SE                            | Staff of Directorate of Program Development                                        |
| Mr. Rudianto MA                                       | Staff of Foreign Aid Administration Section,<br>Directorate of Program Development |
| 2. PAM JAYA                                           |                                                                                    |
| Ir. H. Syamsu Romli                                   | President Director                                                                 |
| Ir. H. Eben Koesbini                                  | Technical & Production Director                                                    |
| Mr. H. Machmud Ranusemito                             | Administration & Finance Director                                                  |
| Ir. Soeharto                                          | Head of Program Development                                                        |
| Ir. Lintong Hutasoit                                  | Staff of Program Development                                                       |
| Mr. Arifin                                            | Staff of Program Development                                                       |
| 3. Directorate General of Water Resources Development |                                                                                    |
| Ir. Soenarto                                          | Sub Director of Private & Community<br>Participation                               |
| 4. BAPPENAS                                           |                                                                                    |
| Dr. Bambang Bintoro                                   | Head of Bureau for Urban Development, Human<br>Settlements, and Spatial Planning   |
| Ir. Medrilzam                                         | Staff of Bureau for Urban Development, Human<br>Settlements, and Spatial Planning  |
| 5. Preparatory Study Team                             |                                                                                    |
| Dr. Shoichi Kunikane                                  |                                                                                    |
| Mr. Makoto Morooka                                    |                                                                                    |
| Mr. Koji Fujiya                                       |                                                                                    |
| Mr. Isao Abe                                          |                                                                                    |
| Mr. Satoshi Nakamura                                  |                                                                                    |
| 6. JICA Expert                                        |                                                                                    |
| Mr. Jun'ichi Wakisaka                                 | Rural Water Supply Expert in Cipta Karya                                           |
| 7. JICA Indonesia Office                              |                                                                                    |
| Mr. Satoru Watanabe                                   | Assistant Resident Representative                                                  |
| Ms. Shanti Dewi                                       | Project Officer                                                                    |

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SCOPE OF WORK  
FOR  
THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF INDONESIA

AGREED UPON BETWEEN

DIRECTORATE GENERAL OF HUMAN SETTLEMENTS,  
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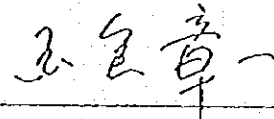
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Dr. Shoichi KUNIKANE  
Leader,  
Preparatory Study Team,  
Japan International  
Cooperation Agency

## I. INTRODUCTION

In response to the request of the Government of Republic of Indonesia (hereinafter referred to as "the Government of Indonesia"), the Government of Japan has decided to conduct the Study on Revise of Jakarta Water Supply Development Project in the Republic of Indonesia (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the Government of Indonesia.

The present document sets forth the Scope of Work with regard to the Study.

## II. OBJECTIVES OF THE STUDY

The objectives of the Study are :

1. to formulate a master plan on the development of water supply for the City of Jakarta (DKI Jakarta) to the year 2019, through the review of the progress after the Master Plan of 1985, the analysis of the new requirements for water supply, the assessment of the managerial situation of Jakarta Water Supply Enterprise (hereinafter referred to as "PAM JAYA"), and the assesment of the possibility of private sector involvement,
2. to conduct a feasibility study for the priority project(s) identified in the master plan, and
3. to transfer technology on planning methods and skills to the counterpart personel of PAM JAYA as well as Directorate General of Human Settlements, Ministry of Public Works (hereinafter referred to as "Cipta Karya").

III. THE STUDY AREA

The Study Area shall cover DKI Jakarta and surrounding areas related to water resources.

IV. SCOPE OF THE STUDY

In order to achieve the objectives mentioned above, the Japanese study team (hereinafter referred to as "the Team") will conduct the Study which shall cover the followings:

## Phase I. Master Plan

1. Review of present conditions of DKI Jakarta and water supply services through existing data and documents, interviews and field observations on:
  - a. physical conditions such as climate, topography, geology, hydrology, hydrogeology, etc.
  - b. social and economic conditions and trends
  - c. conditions of health and hygiene of population
  - d. national and regional development plans and policies
  - e. land use
  - f. conditions of other urban infrastructure
  - g. studies and on-going projects related to water supply
  - h. conditions of existing water supply services with regards to:
    - a) sectoral policies
    - b) legal and institutional framework
    - c) physical aspects such as water sources, water supply schemes and water quality
    - d) operation and maintenance of facilities
    - e) non-effective/non-revenue water
    - f) managerial, organizational and financial aspects of PAN JAYA
    - g) environmental aspects
    - h) private sector involvement
2. Evaluation of present conditions of water supply service with emphasis on:
  - a. progress after the Master Plan of 1985

- b. problems and issues in terms of quantity and quality of water and efficiency of services
  - c. institutional aspects of related organizations and managerial capacity of PAM JAYA
  - d. economic and social aspects
  - e. environmental aspects
  - f. private sector involvement
3. Water demand forecasts up to the year 2019 through projections on:
- a. population growth
  - b. changes in living conditions
  - c. industrial growth and urbanization
  - d. increase in day-time population
  - e. consumption of ground water
  - f. trend of water re-use
4. Evaluation of the possibility of private sector involvement
- a. scope and criteria of private sector involvement
  - b. roles of public and private sectors in water supply service
  - c. technical, financial and social viability
5. Formulation of the Master Plan
- a. establishment of basic policies, goals and strategies with appropriately phased time horizon on:
    - a) target service coverage ratio
    - b) target level of per capita consumption of water and hours to be served
    - c) target level of water quality
    - d) target level of institutional and operational structure with the consideration to the possibility of private sector involvement
  - b. comparative study of technical alternatives on water supply scheme on such aspects as:
    - a) allocation and development of raw water sources
    - b) rearrangement of treatment and distribution system
    - c) measures to reduce non-effective/non-revenue water
    - d) measures to improve tap water quality through the improvement of treatment and distribution
    - e) priority and phasing

- c. selection of the best alternative through such criteria as:
  - a) technical soundness
  - b) financial cost
  - c) economic costs and benefits
  - d) environmental impacts
  - e) efficiency of institutional and operational arrangement
- d. schematic lay-out of facilities
- e. operation and maintenance plans of facilities
- f. possible measures to strengthen capacity of monitoring services
- g. plans for strengthening managerial capacity of PAM JAYA with emphasis on:
  - a) corporate strategies
  - b) financial management and effective tariff collection
  - c) organizational structure
  - d) staffing and manpower development
  - e) customer services
  - f) consideration of social diversities
  - g) involvement of private sector
- h. financial plans including:
  - a) rough cost estimation
  - b) target level of cost recovery
  - c) policy on mobilizing financial resources for investment
  - d) tariff policy and billing system
  - e) optimum fund arrangement
- i. implementation plan by phase
- j. identification of priority project(s)
- k. conduct of Initial Environmental Evaluation (IEE) for the priority project(s)
- l. recommendations

#### Phase II Feasibility Study

1. Confirmation of planning framework
2. In-depth survey and data collection

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3. Examination of alternatives
4. Selection of the best alternative
5. Preliminary design of facilities and equipment plans
6. Operation and maintenance plans
7. Institutional, organizational and personnel requirements for the implementation of the project(s)
8. Cost estimation and financial management plan
  - a. cost estimation
  - b. expected financial sources for investment
  - c. cost and revenue stream
  - d. financial statement
9. Environmental Impact Assessment (EIA)
10. Project evaluation
  - a. technical evaluation
  - b. financial evaluation
  - c. economic evaluation
  - d. social evaluation
11. Project implementation plan

V. STUDY SCHEDULE

The Study shall be conducted according to the attached tentative schedule.

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VI. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Indonesia.

1. Inception Report  
Thirty five (35) copies at the beginning of the Study.
2. Progress Report (I)  
Thirty five (35) copies at the end of the first field survey.
3. Interim Report  
Thirty five (35) copies at the beginning of the second field survey.
4. Progress Report (II)  
Thirty five (35) copies at the end of the third field survey.
5. Draft Final Report  
Thirty five (35) copies within two (2) months after the completion of the third field survey. Cipta Karya will provide JICA with its comments within one (1) month after receipt of the Draft Final Report.
6. Final Report  
Fifty (50) copies within one (1) month after receipt of the comments on the Draft Final Report.

VII. UNDERTAKING OF THE GOVERNMENT OF INDONESIA

1. To facilitate smooth conduct of the Study, the Government of Indonesia shall take necessary measures:
  - a. to secure the safety of the Team in Indonesia.
  - b. to permit the members of the Team to enter, leave and sojourn in Indonesia for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees.

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- c. to exempt the members of the Team from income taxes, duties, and other charges on equipment, machinery and other materials brought into Indonesia for the implementation of the Study,
  - d. to exempt the members of the Team from income tax and other charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Team for their services in connection with the implementation of the Study,
  - e. to provide necessary facilities to the Team for remittance as well as utilization of the funds introduced into Indonesia from Japan in connection with the implementation of the Study,
  - f. to secure permission for entry into private properties or restricted areas related to the Study if necessary,
  - g. to secure permission for the Team to take all data and documents (including maps and photographs) related to the Study out of Indonesia to Japan,
  - h. to provide medical services as needed. Its expenses will be chargeable to members of the Team.
3. The Government of Indonesia shall bear claims, if any arises against members of the Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arises from gross negligence or willful misconduct on the part of the members of the Team.

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4. Cipta Karya shall act as the counterpart agencies to the Team and also as the coordinating bodies in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.
5. Cipta Karya shall, at their own expenses, provide the Team with the followings, in cooperation with PAM JAYA and other organizations concerned:
  - a. available data and information related to the Study
  - b. counterpart personnel for smooth technology transfer
  - c. suitable office space with necessary equipment and appropriate number of vehicles with drivers in PAM JAYA, Jakarta
  - d. credentials or identification cards

#### VII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures;

1. to dispatch, at its own expense, the Team to the Republic of Indonesia,
2. to pursue technology transfer to Indonesian counterpart personnel in the course of the Study.

#### IX. OTHERS

JICA and Cipta Karya shall consult with each other in respect of any matters that may arise from or in connection with the Study.

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APPENDIX

TENTATIVE SCHEDULE

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
WORK IN THE REPUBLIC OF INDONESIA																
WORK IN JAPAN																
REPORT																

REMARKS: IC/R : Inception Report      © : comments from Indonesia side  
 P/R : Progress Report  
 IT/R : Interim Report  
 DF/R : Draft Final Report  
 F/R : Final Report

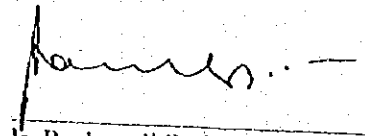
Phase I \_\_\_\_\_ Phase II \_\_\_\_\_

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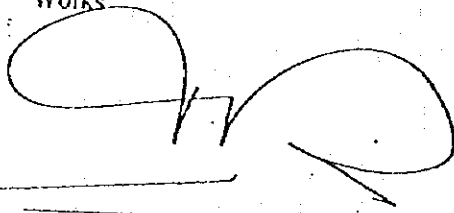
MINUTES OF MEETING  
ON  
THE INCEPTION REPORT  
FOR  
THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF INDONESIA

AGREED UPON BETWEEN  
DIRECTORATE GENERAL OF HUMAN SETTLEMENTS,  
MINISTRY OF PUBLIC WORKS,  
JAKARTA WATER SUPPLY ENTERPRISE  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY

Jakarta, 21st July 1995



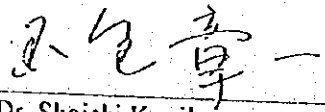
Ir. Raclunadi B. S.  
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Ministry of Public  
Works



Ir. H. Syamsu Romli  
President Director,  
Jakarta Water Supply  
Enterprise  
(PAM Jaya)



Mr. Koichi Iwasaki  
Team Leader,  
JICA Study Team



Dr. Shoichi Kunikane  
Chairman,  
JICA Advisory Committee

Japan International Cooperation Agency Study Team (hereinafter referred to as "JICA Study Team") headed by Mr. Koichi Iwasaki and officials of Directorate General of Human Settlements, Ministry of Public Works and Jakarta Water Supply Enterprise (hereinafter referred to as "Indonesian side") headed by Ir. Rachmadi B. S., Director General of Human Settlements held meetings for explanation and discussion of the Inception Report for "The Study on the Revise of Jakarta Water Supply Development Project" (hereinafter referred to as "the Study") on 18th through 20th July, 1995 at the Headquarters of Cipta Karya in Jakarta.

A list of participants for the meetings appears in Annex-1 to these minutes.

The JICA Study Team submitted 35 copies of the Inception Report to Indonesian side, and then provided a detailed presentation and explanation of the entire content of the Inception Report. Both sides agreed as follows:

I. Basic approach of the study

Indonesian side explained its current situation concerning Private Sector Participation (hereinafter referred to as "PSP") for Jakarta Water Supply as follows:

- In early June 1995, the Government of Indonesia had decided to split Jakarta Water Supply System into two concession areas, Jakarta East and Jakarta West, with Ciliwung River being their boundary.
- Jakarta East would cover Bekasi, Cikarang, and a part of Bogor, and Jakarta West would cover Tangerang and a part of Bogor.
- Two private consortia will be invited for operation, maintenance, and management in the respective water supply area.
- The schedule of PSP is as follows:
 

For Jakarta East	
Completion of draft feasibility study :	July, 1995
Submission of proposal from consortium :	August, 1995
Contract :	Before the end of 1995
For Jakarta West	
Preparation of outline of approach :	August, 1995
Submission of proposal from consortium :	March, 1996

Additional information was provided in "BRIEFING NOTES ON JAKARTA WATER SUPPLY" which was distributed during the meeting and attached in Annex-2.

Upon explanation on the plan of PSP as described above, Indonesian side requested and Japanese side agreed to conduct their study works taking into account the plan of PSP.

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## 2. Study Area

Indonesian side explained that urbanization and housing development in Jakarta have been very extensive and expanded beyond the administrative boundary of DKI Jakarta, and the water supply services for the area are necessary. Furthermore, Indonesian side explained that additional bulk water for DKI Jakarta should be considered as an integrated part of the overall Jabotabek bulk water allocation. Under this condition, Indonesian side requested that the study area should include adjacent area of DKI Jakarta within the reach of PAM Jaya System. Indonesian side confirmed to make an official request to extend the study area as above mentioned.

## 3. Feasibility Study

Both sides agreed that the detail of feasibility study should be discussed in the course of the Study considering PSP.

## 4. Maximum use of information, findings, and recommendation of related projects and studies

Indonesian side suggested that the information, findings, and recommendation of related projects and studies such as Jakarta Water Supply Sector Project and Jabotabek Water Resources Management Study should be utilized as much as possible to save study period and to avoid duplication of efforts.

## 5. Steering Committee

Indonesian side promised to set up the steering committee as soon as possible. Indonesian side agreed to appoint members of the committee, and Indonesian side informed that representatives from Directorate General of Water Resources Development (DGWRD), Provincial Government of West Java, and Jatilohur Authority should also be members of the Committee.

## 6. Liaison in Indonesia

Both sides confirmed to appoint a liaison who would stay in Indonesia during home work period of the Team in Japan, and the Japanese side replied that the JICA Jakarta Office would act as a liaison of the JICA Study Team.

## 7. Detail work schedule

Indonesian side suggested and the JICA Study Team agreed that the Team would prepare detail work schedule to expedite collection of data and reports from related studies and projects.



## ANNEX-1

## LIST OF PARTICIPANTS

## Cipta Karya

1. Ir. Rachmadi B. S., Director General
2. Ir. Budiman Arif, Director of Central Region Implementation Development
3. Ir. Risyana Dipl. II, Sub Director of Water Supply
4. Ir. Bambang Purwanto, Chief of Eastern Region Technical Guidance Section
5. Ir. Didik S. F., Staff of Directorate of Technical Development

## Pam Jaya

1. Ir. Syamsu Romli, President Director
2. Ir. Rama Boedi, Technical & Production Director
3. Ir. Soeharto, Head of Program Development
4. Ir. Lintang Hutasoit, Staff of Program Development
5. Ir. Arifin, Staff of Program Development

## JICA Expert

1. Mr. Takeshi Mori
2. Mr. Shinji Ito

## JICA Study Team

1. Mr. Koichi Iwasaki, Team Leader
2. Mr. Hidetoshi Sawada, Member
3. Mr. Takemasa Mamiya, Member
4. Mr. Satoshi Sekine, Member
5. Mr. Takehiko Oga, Member

## JICA Advisory Committee

1. Dr. Shoichi Kunikane, Chairman
2. Mr. Makoto Morooka, Member

## JICA

1. Mr. Hiroyuki Katayama, JICA Indonesia Office
2. Mr. Nobuaki Miyata, JICA Tokyo Headquarters

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## ANNEX-2

BRIEFING NOTES ON JAKARTA WATER SUPPLY  
(NOTES FOR JICA MISSION ON RECENT DEVELOPMENT  
OF JAKARTA WATER SUPPLY)

1. In early June 1995 the Government has decided to split Jakarta Water Supply System into two concession areas with Ciliwung River being the boundary of the area, and to direct appoint two private consortia to participate in the medium and long term development program of Jakarta Water Supply. The two consortia are Kekar Plastindo/Thames Water (KPTW) for eastern Jakarta Metropolitan and Salim Group/Lyonnaise des Eaux-Dumex (SGLD) for western Jakarta Metropolitan. The areas adjacent to the DKI administrative boundary are also considered to be included in the concession.
2. At the time of this decision, the KPTW consortium has been already involved in developing zones two and four for distribution rehabilitation and management improvement, using service agreement contract with PAM Jaya. With this decision, the MoU that has already been prepared need to be modified accordingly. On the other part, the SGLD consortium, beside their keen interest, is just starting in preparing the proposal regarding their involvement in Jakarta Water Supply.
3. Following the above decision, a coordination team with membership which include representatives of related Ministries and Local Governments has been established by Minister of Public Works, chaired by Director General Cipta Karya. Series of meetings have been conducted as follow-up, and in the coordination meeting held in PAM Jaya office, June 22, 1995 chaired by Director General Cipta Karya and attended by PDAMs involved and both the investors, an action plan and a tentative timetable were prepared. As ~~KPTW~~ KPTW consortium was involved earlier, it was decided that final agreement with this

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group be completed in October 1995, while for the other group (L-SG) will be in March 1996.

4. In parallel with this, the government has received technical assistance from the World Bank for the preparation of investment program for Jakarta Water Supply to cope with the immediate future development. The study is now being carried out and about to be completed in August 1995.
5. Due to the recent development as stated above, the World Bank Mission has conducted its evaluation and presented its findings in the draft Aide Memoire, which was then discussed with the Government in Bappenas, in July 13, 1995. While the Mission seems 'well informed about the recent arrangement', the important notes made by the Mission was the official Bank's position regarding the proposed arrangement, as stated in paras 7 and 46 of the Aide Memoire:
  - a. Investors/operators should be chosen according to the GOI criteria;
  - b. The Bank ensures financing requested for goods, works or services required by concessionaires, if (i) the concession arrangement is satisfactory, (ii) the proposed project represent the least cost solution and environmentally sustainable, and (iii) Bank procurement guidelines are followed.
  - c. Bank support will be through: (i) direct financing and lending by the Government to concessionaires, (ii) guarantees to the lenders of the concessionaires or to extend commercial loan maturity.
6. Accordingly, the Bank has proposed to modify the scope of works of the existing consultancy contract (under the Japanese Grant Funds), and agreed to propose the second phase of the technical assistance, in order to assist the Government in the negotiation process, preparation of concession contracts

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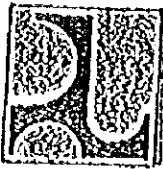
and other issues related to the concession of private investment for Jakarta Water Supply.

7. The final shape of the arrangement of public-private ~~community~~ partnership is being formulated. This will include among others that:
- (i) the provision of bulk water supply ~~is to be secured by the Government and not by one of the concessionaire;~~
  - (ii) the model of the contract for the concession ~~has its minimal risk to PDAM and to the Government;~~
  - (iii) the use of existing personnel and professionals in PDAM ~~is proposed to be maximized (the ratio of PDAM and private personnel is proposed to be 80 to 20);~~
  - (iv) ~~water tariffs need to be decided by local government and the concessionaires secure the social services available to the relevant consumers and others.~~
8. The Government decision on private participation in public sectors is in line with the Government policy in Pelita VI, among others to eliminate the burden of Government funding for public investment, to improve the efficiency of PDAM management and to speed up implementation of water supply services for DKI Jakarta.

Jakarta, July 20, 1995

DIRECTORATE GENERAL OF HUMAN SETTLEMENTS

*Handwritten signature*



DEPARTEMEN PEKERJAAN UMUM  
DIREKTORAT JENDERAL CIPTA KARYA

Jl. R. Patah I No. 1 Telp. 7243950 - 7397770 Fax. 7243950 DJCK. 1A Kotak Pos : 4059 Jakarta 12010

No. : *AM.04.04-DC/341*  
Encl. :

Jakarta, 6 September 1995

Mr. Goichiro Okazaki  
Resident Representative  
Japan International Cooperation Agency  
Indonesia Office

Dear Sir,

Re. : The study on the Revise of Jakarta Water Supply  
Development Project  
Request of Extension of the Study Area

With regard to the Minutes of Meeting on the Inception Report for the Study on the Revise of the Jakarta Water Supply Development Project dated July 21, 1995 attached hereto which was jointly signed with President Director of PDAM JAYA, we hereby would like to request to extend the study area of the captioned study.

Reasons of the extension of the study area are as follows :

- ▶ Urbanization and housing development in Jakarta have been very extensive and expanded beyond the administrative boundary of DKI Jakarta, and Water Supply for the area are necessary.
- ▶ Additional bulk water for DKI Jakarta are necessary to be considered as an integrated part of the overall Jabotabek bulk water allocation.

The study will cover :

- a) Integration of bulk water allocation for overall greater Jabotabek
- b) Integration of Service Areas/distribution systems of areas in the outskirts of Jakarta which most likely will be economical to be covered under the system of PDAM Jaya, which will include the following kecamatans :

Bogor : Kec. Limo  
Kec. Beji  
Kec. Cimanggis  
Kec. Sawangan

Tangerang: Kec. Kosambi  
Kec. Baluceper  
Kec. Cipondoh  
Kec. Ciledug  
Kec. Pondok Aren  
Kec. Ciputat  
Kec. Teluk Naga  
Kec. Pamulang

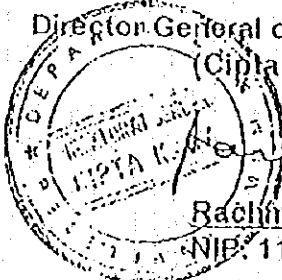
Bekasi : Kec. Jakasampurna  
Kec. Jatiasih  
Kec. Pondok Gede  
Kec. Bekasi Barat  
Kec. Tarumajaya

Based on the reasons stated above, the above Kecamatan of Bogor, Tangerang and Bekasi which are directly adjacent to DKI Jakarta are requested to be included in the study area besides DKI Jakarta.

We hope you to understand the situation and we appreciate your approval on the expansion of the study area.

Sincerely Yours,

Director General of Human Settlement,  
(Cipta Karya)



Rachmadi B.S.  
NIP. 110008693

Cc.

1. Director of Program Development, DGCK
2. Director of Implementation for Central Region, DGCK
3. Director Technical Development, DGCK
4. President Director PAM DKI Jaya

anj 3440126upf

MINUTES OF MEETING  
ON  
THE PROGRESS REPORT NO. 1  
FOR

THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF INDONESIA

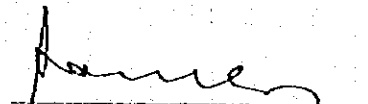
AGREED UPON BETWEEN

STEERING COMMITTEE

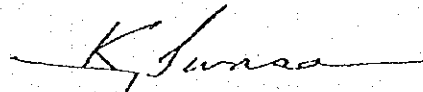
AND

JAPAN INTERNATIONAL COOPERATION AGENCY STUDY TEAM

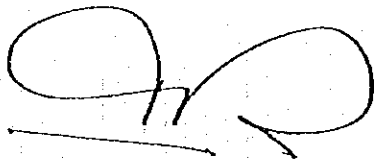
Jakarta, 24th November 1995



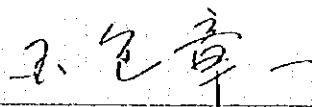
Ir. Rachmadi B. S.  
Director General of  
Human Settlements,  
(Cipta Karya)  
Ministry of Public  
Works



Mr. Koichi Iwasaki  
Team Leader,  
JICA Study Team



Ir. H. Syamsu Romli  
President Director,  
Jakarta Water Supply  
Enterprise  
(PAM Jaya)



Dr. Shoichi Kunikane  
Chairman,  
JICA Advisory Committee

Japan International Cooperation Agency (hereinafter referred to as "JICA") Study Team headed by Mr. Koichi Iwasaki and officials of Steering Committee headed by Ir. Raelunadi B.S., Director General of Human Settlements (Chairman of the Steering Committee), held meeting and the JICA Study Team submitted the Progress Report No. 1 for "The Study on the Revise of Jakarta Water Supply Development Project" (hereinafter referred to as "the Study") on 23rd November, 1995 at the Headquarters of Cipta Karya in Jakarta, Indonesia.

A list of the participants for the meeting appears in Annex-1 to these minutes.

The Steering Committee agreed and accepted the contents of the Progress Report No. 1 with comments that were raised during the meeting. Both sides agreed that the Study should be continued taking the conditions of Private Sector Participation (PSP) into account.

Major points of discussed during the meeting are as follows:

### 1. Basic Concept for the Study

The Master Plan should be prepared on a sustainable basis to contribute to the improvement of public health and social welfare through water supply services.

### 2. Expansion of Future Service Area

The Study has been conducted for whole DKI Jakarta and the fringe area (17 Kecamatan). Eight out of 17 Kecamatan, listed below, are selected as additional service area in year 2019 based on the criteria such as the necessity of piped water supply and advantages of water supply by PAM Jaya.

Limo  
Pondok Gede  
Jatiasih  
Ciptat  
Pamulang  
Pondok Aren  
Ciledug  
Cipondoh

Both sides agreed to include Water Front City Development Area (Annex 2) is the Study Area.

The Indonesian side requested the Study Team to consider the development of Botabek (Bogor, Tangerang and Bekasi) areas as a basis for the formulation of the Water Supply Master Plan.

### 3. Estimation of Future Water Demand

Population in year 2019 was forecasted to reach approximately 14.1 million, approximately 11.2 million in DKI Jakarta and approximately 2.9 million in the above 8 Kecamatan, and the total water demand was estimated as approximately 43.7 m<sup>3</sup>/sec on a daily maximum basis. To meet the future water demand, developments of water supply facilities are required.

13/ 11/ 95



#### 4. Water Resources Development Plan

(1) Water resource development will be required to meet the water demand stated above, and there will be three alternatives as follows:

- 1) Maximum development of water resources in eastern side and the rest amount from water resources in western side.
- 2) Maximum development of water resources in western side and the rest amount from water resources in eastern side.
- 3) Water resource development in both sides at a reasonable balance.

(2) The time schedule of water resource developments should be clearly defined.

(3) Amount of groundwater use for water supply should be decreased until the permissible level which will not cause environmental problems such as land subsidence or sea water intrusion.

#### 5. Future Water Supply System

Alternatives of water supply system toward year 2019 should include the followings.

- Increasing raw water supply capacity through rehabilitation and upgrading of West Tarum Canal including water savings from agriculture.
- Increasing production capacity by expansion of the existing treatment plants and/or construction of new treatment plants.
- Construction of transmission pipeline from Cisadane Treatment Plant to Distribution Center R4. *→ R5*
- Improvement of distributed water quality and increase of benefit of PAM Jaya through the reduction of unaccounted-for water. *RS*
- Establishment of water quantity/quality monitoring system.

#### 6. Institutional Aspect of the Master Plan Study

For the study on institutional aspect, following points should be taking into account.

- Establishment of a centralized system for water resource management
- Establishment of adequate legal framework of water supply
- Institutional arrangement among local governments for water supply from PAM Jaya to the fringe area
- Water supply management organization taking into account Private Sector Participation.

#### 7. Analysis of Overall Financial and Organizational Condition of PAM JAYA

It is necessary to review the current water tariff determination system.

*MS KA 2.*

ANNEX-1 LIST OF PARTICIPANTS

Cipta Karya

1. Ir. Budiman Arif, Director of Central Region Implementation Development
2. Ir. Risyana Dipl. H, Sub Director of Water Supply
3. Ir. Bambang Purwanto, Chief of Eastern Region Technical Guidance Section
4. Ir. Djajadi
5. Ir. Subagio

Pam Jaya

1. Ir. Rana Boedi, Technical & Production Director
2. Ir. Soeharto, Head of Program Development
3. Ir. Lintong Hutasoit, Staff of Program Development
4. Ir. Henny H, Staff of Program Development

POJ

1. Ir. Sri Hamowo
2. Ir. Rachmat Dasuki
3. Ir. Ulama

Ministry of Finance

1. Mr. Busrori, BAKM
2. Ms. Desty Damayanti, BAKM

PUOD, Dept. Dalam Negri

1. Ir. Sugiono Sugiri

P4R., BAPPENAS

1. Ir. Bastary P. Indra

JICA Study Team

1. Mr. Koichi Iwasaki, Team Leader
2. Mr. Eiichiro Araida, Member
3. Mr. Takashi Ueda, Member
4. Mr. Satoshi Sekine, Member
5. Mr. Shinkichi Kobayashi, Member
6. Mr. Takemasa Mamiya, Member
7. Mr. Masami Sugimoto, Member
8. Mr. Takchiko Oga, Member
9. Ms. Margie Tumbelaka

Mj K.P. 2.

JICA Advisory Committee

1. Dr. Shoichi Kunikane, Chairman
2. Mr. Makoto Morooka, Member

JICA Tokyo Headquarters

1. Mr. Satoshi Kimura, JICA Tokyo Headquarters

JICA Indonesia Office

1. Mr. Hiroyuki Katayama, JICA Indonesia Office

JICA Expert

1. Mr. Takeshi Mori

Mr. K. J.



MINUTES OF MEETING  
ON  
DRAFT INTERIM REPORT  
FOR

THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF INDONESIA

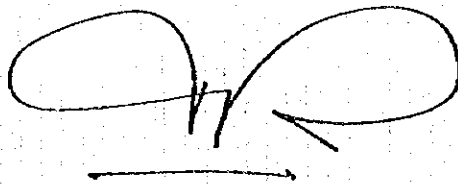
AGREED UPON BETWEEN

TECHNICAL COMMITTEE

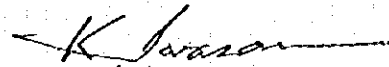
AND

JAPAN INTERNATIONAL COOPERATION AGENCY STUDY TEAM

Jakarta, 6th March 1996

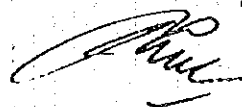


h  
Ir. H. Syamsu Romli  
President Director,  
Jakarta Water Supply  
Enterprise  
(PAM JAYA)



Mr. Koichi Iwasaki  
Team Leader,  
JICA Study Team

for Director General of Human Settlements  
(Cipta Karya)



Ir. Hari Sidharta Dipl. HE  
Director of Technical Development  
Directorate General of Human Settlements,  
(Cipta Karya)  
Ministry of Public Works

Japan International Cooperation Agency Study Team (hereinafter referred to as "JICA Study Team") headed by Mr. Koichi Iwasaki and officials of Technical Committee (hereinafter referred to as "the Committee") headed by Ir. Risyana Dipl. II, Sub Director of Water Supply, Cipta Karya, held a meeting on 5th March, 1996 at the Headquarters of Cipta Karya in Jakarta, Indonesia. Prior to the meeting, the JICA Study Team submitted fifteen (15) copies of the Draft Interim Report for "The Study on the Revise of Jakarta Water Supply Development Project" (hereinafter referred to as "the Study")

A list of the participants for the meeting is presented in Annex-1 to these minutes.

The Committee discussed the contents of the Draft Interim Report. Both sides agreed that the Study should be continued taking the conditions of Private Sector Participation (PSP) into account.

Major points discussed during the meeting are as follows:

#### 1. General

The JICA Study Team explained and the Committee agreed that the Team intended to postpone the finalization of the Interim Report containing the Master Plan in order to include the latest information on water resources development and private sector participation. The Draft Interim Report will be finalized taking into account the latest information and the results of the discussion in this meeting, and the finalized Interim Report will be submitted sometime in May 1996.

The Committee mentioned that the purposes of this meeting were to understand and discuss the proposed Master Plan by the JICA Study Team described in the Draft Interim Report, and the Committee also mentioned that the finalized Interim Report will be discussed again at the meeting with Steering Committee scheduled sometime in May 1996.

The Committee requested that figures described in the Draft Interim Report should be separated into western and eastern part of Jakarta, and the Study Team agreed that the major figures related to the Master Plan will be shown separately by eastern and western area in the summary of the Interim Report to be submitted in May 1996.

The Committee requested and the JICA Study Team agreed that the figures describing the existing condition of PAM JAYA such as the number of connections and served population should be confirmed with the counterparts from the PAM JAYA.

The Committee requested and the JICA Study Team agreed that the source of each data should be clearly mentioned in the Report.

The JICA Study Team explained that the format of the cover of the report has been revised based on the instruction from the JICA Headquarters. The Committee requested the cover of the report to be revised to the original format.

M

K

2. Future Population and Water Demand Forecast

*but it is separated from West & East -*

The JICA Study Team explained that future population and water demand in Water Front City were included in the Master Plan as suggested by the Steering Committee on 23rd November, 1995. The Committee agreed the future population and water demand forecast in the Report and suggested the JICA Study Team to confirm the future plan of the Water Front City with the planning division (BAPPEDA) of DKI Jakarta Government.

3. Water Resources Development

The Committee understood the proposed scheme of water resources development plan. The Committee requested and the JICA Study Team agreed that more detailed explanation on the selection of the best alternative plan among five alternative plans should be described in the report.

The Committee also requested and the JICA Study Team agreed that groundwater management should be described in this report.

The Committee suggested and the JICA Study Team agreed to arrangement of discussions on the water resources development with the agencies concerned during this mission to Indonesia.

4. Future Water Supply System

The JICA Study Team explained alternatives for the future water supply system and the Committee understood the proposed plan. The Committee requested and the Team agreed that the explanation on comparison of five alternatives and selection of the best alternative should be more clearly mentioned in the report.

5. Cost Estimates

The Committee also requested and the Team agreed that the cost required for implementation of the proposed Master Plan should be shown by area, western Jakarta, eastern Jakarta, and fringe area, and phase.

6. Private Sector Participation

The Committee suggested and the JICA Study Team agreed to arrangement of discussions on the private sector participation with the parties concerned during this mission to Indonesia.

*M*

*KD*

**ANNEX-1 LIST OF PARTICIPANTS**

**Cipta Karya**

1. Ir. Risyana Dipl. H, Sub Director of Water Supply
2. Ir. Bambang Purwanto, Chief of Eastern Region Technical Guidance Section
3. Ir. Sudiatmo B., Binlakteng
4. Mr. M. Sapto, BE, Bintek CK.

**PAM JAYA**

1. Ir. Eddie Sutiawan, Head of Planning Division
2. Ir. Tatang AH, Staff of Program Development
3. Ir. Lintong Hutasoit, Staff of Program Development
4. Ir. Henny H, Staff of Program Development
5. Dra. Donna Ria S., Staff of Program Development
6. Mr. Pardomuan Sihombing, Staff of Program Development
7. Mr. Arifin, Staff of Program Development

**PUOD, Dept. Dalam Negri**

1. Ir. A. Kamil, MSi.

**JICA Study Team**

1. Mr. Koichi Iwasaki, Team Leader
2. Mr. Eiichiro Araid, Member
3. Mr. Takashi Ueda, Member
4. Mr. Masami Sugimoto, Member
5. Mr. Satoshi Sekine, Member
6. Mr. Takemasa Mamiya, Member

**JICA Expert**

1. Mr. Takeshi Mori

M

K.A

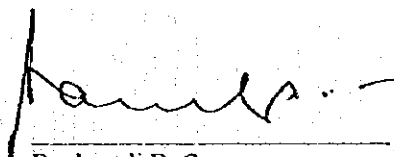


MINUTES OF MEETING  
ON  
INTERIM REPORT  
FOR  
THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF INDONESIA

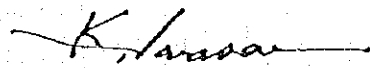
AGREED UPON BETWEEN  
STEERING COMMITTEE  
AND

JAPAN INTERNATIONAL COOPERATION AGENCY STUDY TEAM

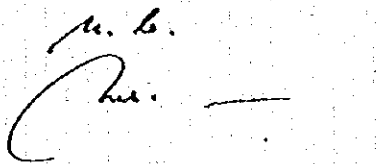
Jakarta, 24th May, 1996



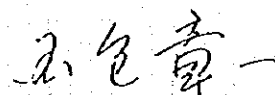
Rachmadi B. S.  
Director General of  
Human Settlements,  
(Cipta Karya)  
Ministry of Public  
Works



Mr. Koichi Iwasaki  
Team Leader,  
JICA Study Team



Ir. H. Syamsu Romli  
President Director,  
Jakarta Water Supply  
Enterprise  
(PAM Jaya)



Dr. Shoichi Kurikane  
Chairman,  
JICA Advisory Committee

Japan International Cooperation Agency (hereinafter referred to as "JICA") Study Team headed by Mr. Koichi Iwasaki and officials of Steering Committee headed by Jr. Rachmadi B.S., Director General of Human Settlements (Chairman of the Steering Committee), held a meeting, and the JICA Study Team submitted Thirty Five (35) copies of the Interim Report for "The Study on the Revise of Jakarta Water Supply Development Project" (hereinafter referred to as "the Study") on 22nd May, 1996 at the Headquarters of Cipta Karya in Jakarta, Indonesia.

A list of the participants for the meeting appears in Annex-1 to these minutes.

The Steering Committee agreed on and accepted the contents of the Interim Report with comments that were raised during the meeting as stated below. The Study Team agreed to revise the Revised Master Plan following these comments, and the revision will be included in the Draft Final Report.

Major points of discussed during the meeting are as follows:

### 1. Water Demand in 2019

Both sides agreed that the water demand in 2019 would reach approximately 47 m<sup>3</sup>/sec on a daily maximum basis including water demand of approximately 3 m<sup>3</sup>/sec in a new reclamation area of the Water Front City. The Committee requested and the Study Team agreed to refine figures of future service ratio in year 2010 and to include basic figures of water demand forecast in a summary of the report in the format of graph.

### 2. Water Resource Development

The Study Team explained a scheme of the water resource development which is along with the water supply system development plan. Since a possibility of implementation of Karian Dam development plan has become low because of resettlement problems, the Committee requested and the Study Team agreed to take other potential water resources into account, among others : long storage of flood control channel, efficiency of the existing irrigation system, etc.

The Committee explained several potential water resources, and, among these potential water resources, the Committee confirmed to allocate additional 5 m<sup>3</sup>/sec and further 5 m<sup>3</sup>/sec, totally 10 m<sup>3</sup>/sec, of raw water from West Tarum Canal to the Jakarta Water Supply System.

### 3. Water Supply Facilities

In conjunction with the alternation of water resource development scheme, the Committee requested and the Study Team agreed to consider additional alternative plan of water supply facilities to utilize 10 m<sup>3</sup>/sec of raw water from West Tarum Canal.

The Committee also requested and the Study Team agreed that the Distribution Center R6 should be located in new reclamation area of the Water Front City.

M. R. 2. X

#### 4. Improvement of Water Quality

The Committee agreed on the proposed water quality improvement plan as follows:

Step 1 : URGENT	Potable at the outlet of all treatment plants.
Step 2 : MID TERM	Potable at the end of the distribution system.
Step 3 : TARGET	Potable at the customer tap.

The Committee recommended and the Study Team agreed that, in order to achieve the target of the Step 2, maximum effort should be placed on the improvement of distribution system as indicated in the Master Plan.

#### 5. Implementation Schedule

The Study Team explained and the Committee agreed that the proposed water supply system development project would be implemented in five steps. The Committee requested and the Study Team agreed to reconsider each scope of part/phase taking alternation of water resource development plan and additional alternative plan of water supply facilities into account.

#### 6. Role of Public and Private Sector

The Study Team explained proposed roles of public and private sectors taking into account future water tariff, efficient operation and maintenance, and sound management of water supply system. The Committee explained and the Study Team agreed to consider the efforts and preparation of private participation by two consortia as now being processed.

#### 7. Project Costs and Finance

The Committee requested and the Study Team agreed to review the project costs considering additional alternative plan of water supply facilities mentioned above. The Committee also requested and the Study Team agreed that rough cost estimates for water resource development should be included in the Master Plan.

#### 8. Priority Project

Both sides agreed on and confirmed that the priority projects are namely, Part One and Part Two, Second Phase of the Second Stage which will depend on additionally allocated 10 m<sup>3</sup>/sec of raw water from West Tarum Canal.

M. R. Z. K.S

## ANNEX-1 LIST OF PARTICIPANTS

## Cipta Karya

1. Ir. Rachmadi B. S., Director General of Cipta Karya
2. Ir. Hari Sidliarle, Director of Planning Section
3. Ir. Risyana Dipl. H, Sub Director of Water Supply
4. Ir. Imman Djaya, Dit, BINTEK

## PAM JAYA

1. Ir. Rama Boedi, Technical & Production Director
2. Ir. Soeharto, Head of Program Development
3. Ir. Lintong Hutasoit, Staff of Program Development
4. Ir. Henny H, Staff of Program Development
5. Dra. Donna Ria S., Staff of Program Development

## Direktorat Jenderal Pengairan

1. Ir. Dr. A. Hafied A. Gany, M. Sc, Director of PPSUD
2. Ir. Roestam Sjarief

## POJ

1. Ir. Sri Harowo, DIRTEK
2. Ir. Muhamad Ulama, DIRUT

## DITJEN PUOD

1. Ir. Sofyan Nwor, Staf Dit. Bina Patda

## DKI

1. Ir. Harmadi, BAPPEDA

## JWSSP

1. Ir. Rudi Willen

## JICA Study Team

1. Mr. Koichi Iwasaki, Team Leader
2. Mr. Eiichiro Araida, Member
3. Mr. Masami Sugimoto, Member
4. Mr. Satoshi Sekine, Member
5. Mr. Takemasa Mamiya, Member

## JICA Advisory Committee

1. Dr. Shoichi Kunikane, Chairman

## JICA Indonesia Office

1. Mr. Hiroyuki Katayama, JICA Indonesia Office

## JICA Expert

1. Mr. Takeshi Mori

*M. R. J. K.*

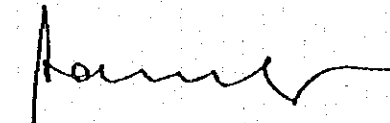
MINUTES OF MEETING  
ON  
TERMS OF REFERENCE  
FOR  
FEASIBILITY STUDY  
IN

THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF INDONESIA

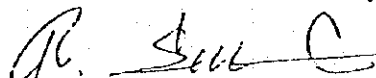
AGREED UPON BETWEEN

DIRECTORATE GENERAL OF HUMAN SETTLEMENTS,  
MINISTRY OF PUBLIC WORKS,  
JAKARTA WATER SUPPLY ENTERPRISE  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY

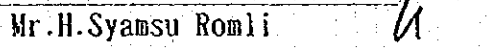
Jakarta, August 2, 1996



I. Rachmadi B.S.  
Director General of  
Human Settlements,  
(Cipta Karya)  
Ministry of Public Works



Mr. SUWA Ryo  
Resident  
Representative of  
JICA INDONESIA Office



Mr. H. Syamsu Romli  
President Director,  
Jakarta Water Supply Enterprise  
(PAM Jaya)

Japan International Cooperation Agency Indonesia Office represented by Mr. SUWA Ryo and officials of Directorate General of Human Settlements, Ministry of Public Works, and Jakarta Water Supply Enterprise (hereinafter referred to as "Indonesian side") headed by Ir. Rachmadi B.S., Director General of Human Settlements, held meetings for confirmation of the Terms of Reference for the feasibility study in "The Study on the Revise of Jakarta Water Supply Development Project" at the Headquarters of Cipta Karya in Jakarta, following a previous agreement on further clarification of the scope stated in "3. Feasibility Study" of the "Minutes of Meeting on the Inception Report" signed on by Japanese and Indonesian sides on 21st July, 1995.

Both Japanese and Indonesian sides agreed on the Terms of Reference as attached in Annex-1 to these minutes.

A list of participants for the meetings appears in Annex-2 to these minutes.

AB:sh

## ANNEX-1

TERMS OF REFERENCE  
FOR  
THE FEASIBILITY STUDY

## 1. Purpose of the Study

The purpose of the Feasibility Study is to assist PAM Jaya in the preparation of institutional setup and the development of investment plan, operation, maintenance and delivery of services of water supply system for Jakarta. That will be implemented through public-private partnership.

## 2. General Scope for the Study

The Study will be conducted for the priority projects identified in the Master Plan as Part 1 and Part 2 of staged developments which are supposed to be financed, operated and managed by the private sectors, taken into consideration private sector proposal/plan, especially on the Part 1.

The Scope of Feasibility Study will consist of the following activities :

- 1) Technical studies, as prescribed hereinafter, on facilities included in the priority projects namely, water resources, raw water intake facilities, treatment plants, treated water transmission pipelines, distribution centers and distribution pipelines.
- 2) Studies for institutional strengthening including legal and organizational development to support effective operation of the water supply system toward its social goal.
- 3) Studies on tariff determination system.
- 4) Studies on future management, operation and maintenance of the whole system of Jakarta Water Supply after the raw water intake.
- 5) Preparation of recommendations to achieve predetermined performance targets.

3. In-depth Survey and Data Collection

3.1 Additional Data Collection

For the execution of the Study, additionally required information/data will be collected with the assistance of counterparts from GOI side. Additional information/data will include following aspects :

1) Technical Aspects

- a) Latest technical plan by the private sectors, if any.
- b) Latest information on Water Front City development, if any.
- c) Site investigation of WTC for upgrading quantity and quality.
- d) Unit price for cost estimate.
- e) Geological data of premises of the existing water treatment plants planned to be expanded.
- f) Design/as-built documents and drawings of the existing water treatment plants planned to be expanded.

2) Institutional Aspects

3) Financial Aspects

3.2 Additional Survey

Topographical survey of the locations for facilities such as for treatment plants and distribution centers included in the priority project will be required.

Exact location of such facilities will be decided by Indonesian side based on the recommendation of the Study Team. Upon decision of the location, the topographical survey for the priority project will be executed by the local firm with consultation of the Team and with assistance of Indonesian side.

4. Examination of Alternatives and Selection of Best Alternatives

The Team will examine alternatives from the viewpoints of technical aspects, institutional aspects, financial aspects, operation and maintenance aspects and environmental aspects, and the best alternative will be selected.

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Alternative study will include the followings :

1) Water Supply Facilities

Alternative study of the water supply facilities will be executed for the best water supply system which was selected in the Master Plan. Alternative studies in the Study will include alternative study on the layout of treatment facilities, treatment process, and selection of the pipe material.

2) Provisions for Future Zoning of Distribution Network

Alternative study of the trunk distribution mains will be executed taking provisions for the future zoning including trunk main network and connecting mains to the neighboring zone into consideration.

3) Upgrading of the existing West Tarum Canal(WTC)

Although West Tarum Canal is not water supply facilities, alternative study of quantity and quality upgrading of WTC will be executed through the discussion with the DGWD/Jatiluhur Authority, considering importance and urgency of acquisition of the water source for development of water supply system for the near future.

5. Preliminary/Conceptual Design of Facilities

5.1 Preliminary Design

Layout and general plan of water supply facilities required for the priority projects including treatment plants(expansion and new facilities), distribution centers will be preliminarily designed.

5.2 Conceptual Design

Conceptual design of distribution system which will show the general plan, diameter and length of the distribution pipeline will be executed.

Conceptual design of upgrading quantity and quality of the existing WTC will also be executed for the quick implementation.

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## 6. Operation, Maintenance, and Monitoring Plans

### 6.1 Operation and Maintenance Plan

Operation and maintenance plan will be studied for designed facilities of the priority projects considering condition of existing facilities. The plan is prepared as the guidance for the Private Sector which are responsible for the operation and maintenance.

### 6.2 Monitoring System

Monitoring system for PAM JAYA to monitor performance of water supply system which will be operated by the Private Sector and for assistance of the proper operation and management will be planned. The system will focus on, specially, water flow, water pressure and water quality monitoring.

## 7. Cost Estimation

### 7.1 Materials and Unit Cost

Materials required for the facilities preliminarily designed will be listed and broken down into locally available materials and ones to be imported. Unit costs for construction of water supply facilities will be studied.

### 7.2 Preliminary Cost Estimate

Based on the design, plans and schedule described above, preliminary costs will be estimated for the execution of the project. The costs will include cost for land acquisition, civil work and procurement of materials, engineering fee, operation and maintenance cost, and contingencies.

Rough cost estimate will be prepared separately in terms of foreign currency portion and local currency portion.

## 8. Organization, Management, and Human Resources Development

### 8.1 Organization for PAM JAYA

Appropriate organizational structure of PAM JAYA will be proposed for efficient regulation and controlling of the implementation and operation of the priority projects.

## 8.2 Role sharing of PAM JAYA and the private sectors

Based on the basic principles for the development and operation of the Jakarta Water Supply System with necessary functions identified in the Master Plan, and considering latest progress of the concession agreement between PAM JAYA and the private consortia, the Study will be proceeded to propose rational responsibility sharing between PAM JAYA and the Private Sector.

## 8.3 Strengthening of PAM JAYA

Implementation of the private sector participation plan necessitates further strengthening of PAM JAYA's managerial capabilities. The Team will study and make recommendations on the organizational structure, management system, and human resources development of PAM JAYA headquarters which is supposed to supervise performance of private sectors.

To proceed to the next step in the development of institutional capacity of the Jakarta Water Supply System, detailed terms of reference for the further study for strengthening administrative and legal frameworks according to the steps proposed in the Master Plan will be elaborated.

## 9. Financial Plan

### 9.1 Financial sources for Investment

Financial sources for investment of the priority projects will be assumed to come from the private sector or public-private partnership.

### 9.2 Financial projection

Based on estimated costs and financing sources, financial projection will be prepared for the water supply entity.

### 9.3 Financial plan

Among possible financial conditions for private investment and availability of financial sources in the future, the suitable alternatives of the financial plan will be considered taking changes in variables including water tariffs and water charging into account.

10. Environmental Impact Assessment

10.1 Execution of EIA by Indonesian Consultants

Based on the TOR for EIA which is approved by the Indonesian authority concerned, EIA will be executed by local engineers, and the Team will prepare a draft EIA Report and submit it to GOI.

10.2 Review of EIA

Based on the results of EIA, the Team will review environmental impact which will be caused by the implementation of the projects and prepare countermeasures to avoid or minimize the environmental impact.

11. Project Evaluation

The results of the Study will be reviewed from the following view points taking private sector participation into consideration.

11.1 Technical Evaluation

The priority projects should be technically appropriate and should be synchronized with manpower development scheme.

11.2 Financial Evaluation

Based on the proposed organizational framework for the project implementation including financial schemes, the financial consequences of the project implementation and operation are evaluated.

The analyses will be made on the priority project in terms of cash flow and profit and loss conditions during the project duration.

11.3 Economic Evaluation

Economic evaluation will be made for this project using economic internal rate return. Qualitative evaluations will be made for those benefits which are not able to be measured.

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11.4 Social Evaluation

Evaluation will be made on the possibility of any improvement, in public health and also in the living condition of the poor as a result of this project.

12. Project implementation schedule

Project implementation schedule will be prepared by each fiscal year.

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ANNEX-2

LIST OF PARTICIPANTS

Cipta Karya

1. Ir. Rachmadi B. S., Director General
2. Ir. Hari Sidharta Dipl. HE, Director of Technical Development
3. Ir. Risyana Dipl. H. Sub Director of Water Supply
4. Ir. Irnan Djaya, Staff of Directorate of Technical Development

PAM Jaya

1. Ir. Syamsu Romli, President Director
2. Ir. Soeharto, Head of Program Development

JICA Indonesia Office

1. Mr. SUWA Ryo, JICA Indonesia Office
2. Mr. KATAYAMA Hiroyuki, JICA Indonesia Office

JICA Expert

1. Mr. MORI Takeshi

*Handwritten initials:*  
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R  
L

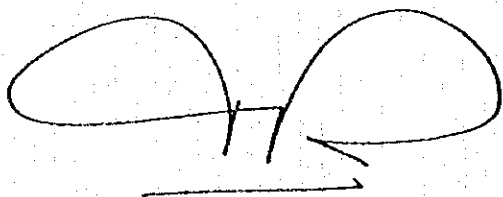
MINUTES OF MEETING  
ON  
PROGRESS REPORT NO. 2  
FOR  
THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF INDONESIA

AGREED UPON BETWEEN  
STEERING COMMITTEE

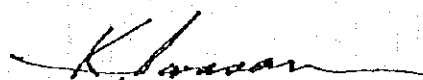
AND

JAPAN INTERNATIONAL COOPERATION AGENCY STUDY TEAM

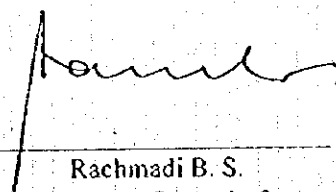
Jakarta, 28th August, 1996



Ir. H. Syamsu Ronli  
President Director,  
Jakarta Water Supply  
Enterprise  
(PAM Jaya)



Mr. Koichi Iwasaki  
Team Leader,  
JICA Study Team



Rachmadi B. S.  
Director General of  
Human Settlements,  
(Cipta Karya)  
Ministry of Public Works

Japan International Cooperation Agency (hereinafter referred to as "JICA") Study Team headed by Mr. Koichi Iwasaki and officials of Steering Committee headed by Ir. Rachmadi B.S., Director General of Human Settlements (Chairman of the Steering Committee), held a meeting, and the JICA Study Team submitted Thirty Five (35) copies of the Progress Report No. 2 for "The Study on the Revise of Jakarta Water Supply Development Project" (hereinafter referred to as "the Study") on 22nd August, 1996 at the Headquarters of Cipta Karya in Jakarta, Indonesia.

A list of the participants for the meeting appears in Annex-1 to these minutes.

The Steering Committee agreed on and accepted the contents of the Progress Report No. 2 with comments that were raised during the meeting as stated below. The Study Team agreed to prepare the Draft Final Report which will contain Master Plan and the results of the Feasibility Study considering the comments, and the Draft Final Report will be submitted in November 1996.

Major points of discussion during the meeting are as follows:

#### 1. Raw Water Resources Development

The Committee requested and the JICA Study Team agreed to study the maximum capacity of the West Tarum Canal (WTC) beyond 5 m<sup>3</sup>/sec after upgrading works. The Committee recommended to consider following alternatives for the upgrading works.

1. Sheet piling from Bekasi Weir to Cawang (steel or concrete)
2. Partial sheet piling of which length is 2.1 km in downstream of Bekasi Weir
3. Lining of existing canal from Bekasi to Cawang
4. Combination of raw water pipe and upgrading works

The Committee requested and the JICA Study Team agreed to prepare recommendation on appropriate method of WTC upgrading works to avoid extremely high turbidity during the construction period.

#### 2. Water Quality Improvement

The JICA Study Team explained the necessity of quality improvement for raw water and treated water and explained the methodology of the improvement. The Committee agreed the methodology and the Committee suggested that the water quality should be controlled carefully since many complaints have been raised from communities.

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### 3. Water Supply System

The JICA Study Team explained future water supply system development under the priority projects which include construction of Buaran III and Cipayung Treatment Plants and the Committee agreed the development plan.

The Committee requested that space required (ha.) for future water supply system under the priority projects should be clearly mentioned in the Report. The JICA Study Team agreed to specify land area required in the Draft Final Report after preliminary design works which will be executed during home work period in Japan.

The JICA Study Team recommended to start arrangements or coordinations among agencies concerned for the land acquisition required.

### 4. Role of Government and Private Sector

The Committee suggested that situation in other countries concerning role sharing between central government and private sectors should be introduced in the study report. The Committee also suggested and the JICA Study Team agreed that the Team should concentrate on organizational planning of PAM JAYA after the private sector participation.

**ANNEX-1 LIST OF PARTICIPANTS**

**Cipta Karya**

1. Ir. Rachmadi B. S., Director General of Cipta Karya
2. Ir. Budiman Arif, Director of Central Region Implementation Development
3. Ir. Risyana Dipl. II, Sub Director of Water Supply
4. Ir. Irman Djaya, Dit, BINTEK
5. Ir. Subagio, BINTEK A. B.

**PAM JAYA**

1. Ir. Rama Boedi, Technical & Production Director
2. Ir. Henny H, Staff of Program Development
3. Dra. Donna Ria S., Staff of Program Development

**Directorat Jenderal Pengairan**

1. Ir. Dr. A. Hafied A. Gany, M. Sc, Director of PPSUD

**DITJEN PUOD**

1. Ir. Eddy Kurniadi, DG-PUOD/DDN
2. Ir. A. Kamil, MSi.

**DKI**

1. Ir. Harmadi, BAPPEDA

**BOTABEK UDP II**

1. Mr. Rik Diert

**JICA Study Team**

1. Mr. Koichi Iwasaki, Team Leader
2. Mr. Eiichiro Araida, Member
3. Mr. Takashi Ueda, Member
4. Mr. Satoshi Sekine, Member
5. Mr. Shinkichi Kobayashi, Member
6. Mr. Takemasa Mamiya, Member
7. Mr. Teddy Masanori Kartasasmita, Member
8. Mr. Mitsuhiro Doya, Member

**JICA Indonesia Office**

1. Mr. Hiroyuki Katayama, JICA Indonesia Office

**JICA Expert**

1. Mr. Takeshi Mori

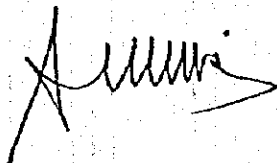
MINUTES OF MEETING  
ON  
DRAFT FINAL REPORT  
FOR  
THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT  
IN  
THE REPUBLIC OF INDONESIA

AGREED UPON BETWEEN  
STEERING COMMITTEE

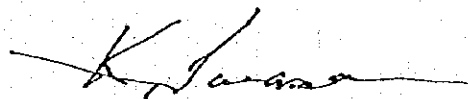
AND

JAPAN INTERNATIONAL COOPERATION AGENCY STUDY TEAM

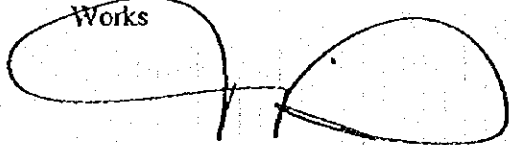
Jakarta, 15 November, 1996



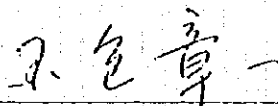
Ir. Achmad Lanti, M. Eng  
Secretary of Director General,  
Directorate General of  
Human Settlements,  
Ministry of Public  
Works



Mr. Koichi Iwasaki  
Team Leader,  
JICA Study Team



Ir. H. Syamsu Romli  
President Director,  
Jakarta Water Supply  
Enterprise  
(PAM Jaya)



Dr. Shoichi Kunikane  
Chairman,  
JICA Advisory Committee

The Japan International Cooperation Agency (hereinafter referred to as "JICA") Study Team headed by Mr. Koichi Iwasaki, the JICA Advisory Committee headed by Dr. Shoichi Kunikane and officials of the Steering Committee headed by Ir. Achmad Lanti, M. Eng., Secretary of Director General, Directorate General of Human Settlements (Acting Chairman of the Steering Committee), held a meeting, and the JICA Study Team submitted Thirty Five (35) copies of the Draft Final Report for "The Study on the Revise of Jakarta Water Supply Development Project" (hereinafter referred to as "the Study") on 14th November, 1996 at the Headquarters of the Directorate General of Human Settlements in Jakarta, Indonesia.

A list of the participants for the meeting appears in Annex-1 to these minutes.

The Steering Committee agreed on and accepted the contents of the Draft Final Report with comments that were raised during the meeting as stated below. The Study Team agreed to prepare the Final Report which will contain all the results of Master Plan and the Feasibility Study considering the comments.

Major points of discussion during the meeting are as follows:

#### 1. General

The chairman explained recent movement of Jakarta water supply development plan, and some modifications of the Report will be done as follows:

- (1) Shifting location of a planned treatment plant from Buaran (Buaran III Treatment Plant) to Bekasi

Although the location of one planned treatment plant included in the priority projects was fixed in Buaran at the last meeting between the Steering Committee and the JICA Study Team, the Indonesian side now plans to construct it in Bekasi. The shifting of location is due to economic and social considerations, which is likely to be more appropriate particularly for privatization in the near future. Even though the shifting of Buaran III to Bekasi is going to be implemented, however the quality improvement measures at WTC downstream from Bekasi Weir is still unchanged for the purpose at other existing treatment plants (i.e. Buaran I & II, Pejompongan I & II, and Pulogadung).

The new plan will be introduced in the Final Report as a possible location of the new treatment plant.

- (2) Water resources development plan in the western area of Jakarta

The Indonesian side has studied the possibility of water resources development in the western area of Jakarta such as the Cisadane, Cidurian, and Cimanceuri river basins by constructing rubber dams and or by other effective means.

The Study Team agreed to introduce these studies conducted by the Indonesian side in the Final Report.

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(3) Water supply development in Botabek area

The Indonesian side will make its effort to upgrade water supply condition in Botabek Area using assistance from the Asian Development Bank. The Study Team agreed to introduce an Indonesian plan for water supply development in Botabek area in the Final Report based on the information from the Indonesian side.

2. Revision of a table in the Executive Summary "Key Figures of the Revised Master Plan"

The Committee suggested and the Study Team agreed to revise the table "Key Figures of the Revised Master Plan" included in the Executive Summary to indicate individual data for DKI Jakarta and the fringe area separately.

3. Financial analysis

The Committee requested and the Study Team agreed to calculate FIRR under the condition that the existing water tariff will remain unchanged until 1997.

4. Preliminary economic evaluation of upgrading West Tarum Canal

The Committee requested and the Study Team agreed to conduct economic evaluation for the upgrading West Tarum Canal applying another discount rate of 22 %, as proposed by the representative of Ministry of Finance.

5. Deadline of further comments

The Study Team requested and the Committee agreed to submit further comments on the Draft Final Report, if any, by December 13, 1996 to JICA Indonesia Office.

6. Opening the Final Report to the public

All parties agreed to open the Final Report to the public.

7. Technical Seminar

Any further detailed comments as regards to the Draft Final Report will be discussed at the Technical Seminar to be held in Ambhara Hotel from November 18 through November 20, 1996.

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ANNEX-1

LIST OF PARTICIPANTS

Ditjen Cipta Karya

1. Ir. Achmad Lanti, M. Eng., Secretary of Director General
2. Ir. Budi Yuwono, Dipl. SE, KSD
3. Ir. Bambang Purwanto, BINTEK
4. Ir. Djajadi, Team Technic of PSP

Ditjen Pengairan

1. Ir. F. Putuhena, Dit. Bina Program

PAM JAYA

1. Ir. Lintang Hutasoit, Staff of Program Development
2. Dra. Donna Ria S., Staff of Program Development
3. Mr. Arifin, Staff of Program Development

PPSDA

1. Ir. Bakti Sudarmanto, Kasi Tengah, Dit. PPSDA
2. Ir. Sohirin, Kasi Tenga, Staff Dit. PPSDA

PUOD

1. Ir. A. Kamil, MSi.

DEPKU

1. Drs. Edison S., Kasi Pemb IV, BAKD

DKI

1. Ir. Harmadi, BAPPEDA, KASI PENGAIRAN

JWSSP

1. Mr. Rudi Willem

JICA Study Team

1. Mr. Koichi Iwasaki, Team Leader
2. Mr. Eiichiro Arita, Member
3. Mr. Satoshi Sekine, Member
4. Mr. Takemasa Mamiya, Member

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JICA Advisory Committee

1. Dr. Shoichi Kunikane, Chairman
2. Mr. Makoto Morooka, Member

JICA Headquarters

1. Mr. Yukihiro Ejiri

JICA Indonesia Office

1. Mr. Hiroyuki Katayama, JICA Indonesia Office

JICA Expert

1. Mr. Takeshi Mori
2. Mr. Shinji Ito

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THE STUDY ON THE REVISE  
OF  
JAKARTA WATER SUPPLY DEVELOPMENT PROJECT

LIST OF STUDY TEAM MEMBERS

- Koichi Iwasaki, *Team Leader/Project Formation*
- Eiichiro Araida, *Water Resource*
- Takashi Ueda, *Unaccounted-for Water/Operation and Maintenance*
- Satoshi Sekine, *Management/ Finance*
- Kasyu Kishino, *Environmental Assessment/Water Qualities*
- Shinkichi Kobayashi, *Water Re-Use, Regional Development*
- Yasuhiro Aoki, *Regional Development (Water Demand Forecast)*
- Takemasa Mamiya, *Water Supply Facilities*
- Masami Sugimoto, *Organization, Institution and Private Sector Involvement*
- Hideto Nakamura, *Implementation plan/Cost Estimates*
- Teddy Masanori Kartasasmita, *Social Assessment*
- Mitsuhiro Doya, *Private Sector Participation*
- Takehiko Oga, *Water Supply Planning*