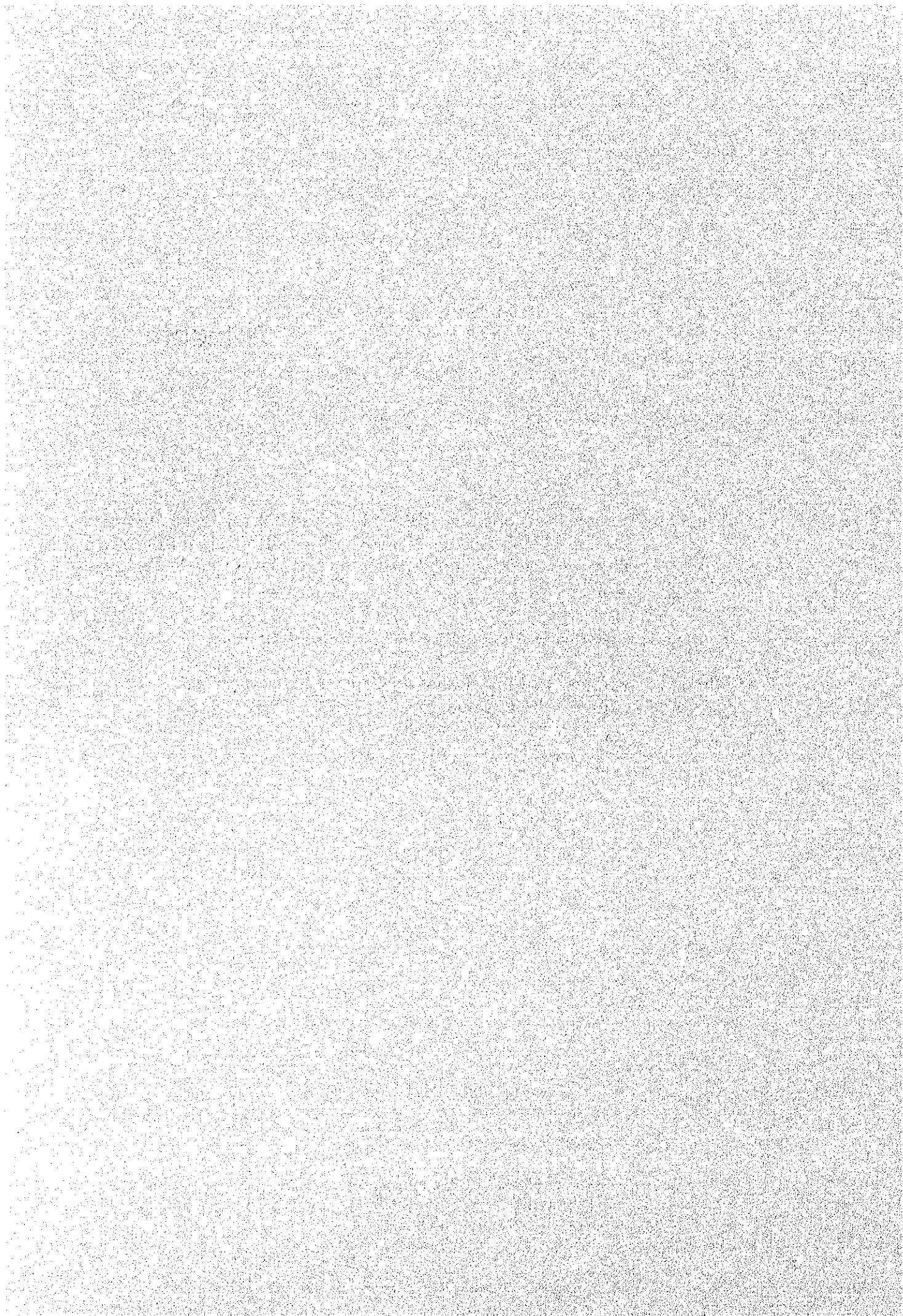


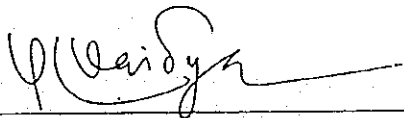
## **Attachments**

- Attachment 1** Scope of Work and Minutes of Meeting on December 16, 1992, for the Master Plan Study on the Rehabilitation of Government Developed Irrigation Schemes in the Kathmandu Valley
- Attachment 2** Minutes of Meetings on the Inception Report
- Attachment 3** Minutes of Meetings on the Progress Report (I) and Minutes of Staff Meetings



SCOPE OF WORK  
FOR  
THE MASTER PLAN STUDY  
ON  
THE REHABILITATION FOR GOVERNMENT DEVELOPED IRRIGATION SCHEMES  
IN THE KATHMANDU VALLEY  
IN  
THE KINGDOM OF NEPAL  
AGREED UPON BETWEEN  
DEPARTMENT OF IRRIGATION  
MINISTRY OF WATER RESOURCES  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY

KATHMANDU, DECEMBER 16, 1992



Mr. Y. L. Vaidya  
Director General,  
Department of Irrigation,  
His Majesty's Government  
of Nepal



Mr. Norikazu Tsujii  
Leader,  
Preparatory Study Team,  
Japan International  
Cooperation Agency

## I. INTRODUCTION

In response to the request of His Majesty's Government of Nepal (hereinafter referred to as "HMGN"), the Government of Japan has decided to conduct the Master Plan Study on the Rehabilitation for Government Developed Irrigation Schemes in the Kathmandu Valley (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

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

The Department of Irrigation, Ministry of Water Resources (hereinafter referred to as "DOI") shall act as the counterpart agency to the Japanese study team and also as the coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

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 rehabilitation for government developed irrigation schemes in the Kathmandu Valley and to conduct a feasibility study in the selected model areas identified in the master plan and
2. to carry out technology transfer to the Nepalese counterpart personnel in the course of the Study.

## III. Study Area

The Study covers government developed irrigation schemes of approximately 9,000ha in the three districts (Kathmandu, Bhaktapur and Lalitpur) of the Kathmandu Valley.

## IV. Scope of the Study

In order to achieve the above objectives, the Study will consist of two(2) phases and will cover the following items.

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## 1. Phase I

- 1.1. Collection and analysis of the following data and information, through the field survey on the following:
- (1) natural condition (topography, meteorology, hydrology, geology, soil, water quality, water resources, and environment);
  - (2) social condition (population, regional socio-economy, social infrastructure, education, and regional development plan);
  - (3) agriculture (land use, land tenure, cultivation technique, cropping pattern, yield, production, agricultural machinery, and livestock);
  - (4) agro-economy (farmers economy, agricultural credit, processing, and marketing system);
  - (5) agricultural infrastructure (water source, irrigation and drainage system, farm road, and rural water supply); and
  - (6) agricultural supporting system (farmers' organizations, supporting organizations, and extension service organizations).
- 1.2. Composition of inventory list with investigation of structure scale, superannuation and damage of the irrigation and drainage facilities in the study area.
- 1.3. Identification of constraints of operation and maintenance of the irrigation and drainage in the study area.
- 1.4. Formulation of a master plan on the rehabilitation for government developed irrigation schemes in the study area and preparation of operation and maintenance manual for water management and irrigation facilities.
- 1.5. Selection of the model areas for the feasibility study.
- 1.6. Preparation of topographic maps at the scale of 1/5,000 for the model areas.

## 2. Phase II

- 2.1. Field survey for collection of supplementary data and information of the model areas.
- 2.2. Formulation of the agricultural development plan of the model areas by considering the following components:

- (1) Land use;
- (2) Cropping pattern;
- (3) Farming system;
- (4) Irrigation and drainage;
- (5) Rural infrastructure; and
- (6) Agricultural supporting system.

- 2.3. Preparation of a preliminary design of the main facilities.
- 2.4. Formulation of operation and maintenance plan.
- 2.5. Preparation of the project implementation schedule.
- 2.6. Estimation of the project costs and benefits.
- 2.7. Overall evaluation of the project.
- 2.8. Recommendation.

#### V. Study Schedule

The Study will be executed in accordance with the tentative schedule shown in the Annex.

#### VI. Report

JICA will prepare and submit the following reports in English to HMGN.

##### 1. Inception Report

Twenty (20) copies at the commencement of the Phase I field work.

##### 2. Progress Report (1)

Twenty (20) copies at the end of the Phase I field work.

##### 3. Interim Report

Twenty (20) copies at the commencement of the Phase II field work.

##### 4. Progress Report (2)

Twenty (20) copies at the end of the Phase II field work.

## 5. Draft Final Report

Twenty (20) copies at the end of the Phase II home office work. HMGN provides JICA with its comments on the Draft Final Report within one (1) month after receipt of the Draft Final Report.

## 6. Final Report

Fifty (50) copies within one (1) months after receiving HMGN's comments on the Draft Final Report.

## VII. Undertaking of HMGN

1. To facilitate smooth conduct of the Study, HMGN shall take necessary measures:
  - (1) to secure the safety of the Japanese study team;
  - (2) to permit the members of the Japanese study team to enter, leave and sojourn in the Kingdom of Nepal for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees;
  - (3) to exempt the members of the Japanese study team from taxes, duties, fees and any other charges on equipment, machinery and other materials brought into the Kingdom of Nepal for the conduct of the Study;
  - (4) to exempt the members of the Japanese study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese study team for their services in connection with the implementation of the Study;
  - (5) to provide necessary facilities to the Japanese study team for the remittance as well as utilization of the funds introduced into the Kingdom of Nepal from Japan in connection with the implementation of the Study;
  - (6) to secure permission for entry into private properties or restricted areas for the implementation of the Study as and when necessity arises;
  - (7) to secure permission for the Japanese study team to take all data and documents related to the Study including photographs and maps out of the Kingdom of Nepal to Japan; and
  - (8) to provide medical services as needed. Its expenses will be chargeable on the members of the Japanese study team.
2. HMGN shall bear claims, if any arises, against the members

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of the Japanese study 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 arise from gross negligence or willful misconduct on the part of the members of the Japanese study team.

3. DOI shall, at its own expense, provide the Japanese study team with the following, in cooperation with the Department of Agriculture and authorities concerned;

- (1) available data and information related to the Study;
- (2) counterpart personnel;
- (3) suitable office space & facilities in the study area; and
- (4) credentials or identification cards.

#### VIII. UNDERTAKING OF JICA

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

1. to dispatch study teams, at its own expense, to the Kingdom of Nepal; and
2. to pursue technology transfer to the Nepalese counterpart personnel in the course of the Study.

#### IX. OTHERS

JICA and DOI shall consult with each other in respect of any matter that is not agreed upon in this document and may arise from or in connection with the Study.

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Annex

TENTATIVE SCHEDULE

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Item																		
Work in Nepal																		
Work in Japan																		
Topographic Mapping																		
Submission of Report	*				*							*	*				*	*
	Ic/R				P/R(1)							It/R	P/R(2)				DF/R	F/R
Phase	Phase I										Phase II							

- (Note)
- Ic/R : Inception Report
  - P/R(1) : Progress Report(1)
  - It/R : Interim Report
  - P/R(2) : Progress Report(2)
  - DF/R : Draft Final Report
  - F/R : Final Report

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MINUTES OF MEETING  
ON  
SCOPE OF WORK  
FOR  
THE MASTER PLAN STUDY  
ON  
THE REHABILITATION FOR GOVERNMENT DEVELOPED IRRIGATION SCHEMES  
IN  
THE KATHMANDU VALLEY IN THE KINGDOM OF NEPAL

The preparatory study team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA"), and headed by Mr. Norikazu Tsujii, visited the Kingdom of Nepal from December 2 to December 18, 1992 for the purpose of discussing and confirming the Scope of Work for the master plan study on the rehabilitation for government developed irrigation schemes in the Kathmandu valley in the Kingdom of Nepal (hereinafter referred to as "the Study").

The Team had a series of discussions with the officials concerned of the Department of Irrigation, Ministry of Water Resources of His Majesty's Government of Nepal (hereinafter referred to as "DOI") on the Scope of Work for the Study. The list of participants in a series of meetings is shown in the attached paper.

As a result of the discussions, the Team and the DOI agreed on the Scope of Work for the Study.

The following are the main issues discussed and agreed upon by both sides in relation to the Scope of Work for the Study.

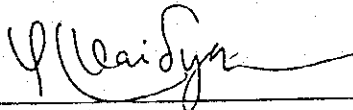
1. The Team suggested approximately 3,000ha of the model areas to be studied at the level of feasibility study, but the DOI requested 5,000ha. As a result of examination, both sides agreed that, the model areas is to be finalized depending upon outcome of master plan study.

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2. The office for the Japanese study team should be equipped with electricity, city water and telephone.
3. The DOI shall get a permission for using the aero-photograph covering the Study area and taking it out of the Kingdom of Nepal from the Survey Department and related authorities.
4. The DOI shall establish a coordinating committee which consists of representatives from the DOI and the Ministry of Agriculture for the Study before the beginning of the Study.
5. The DOI requested that the following equipment necessary for the Study be procured by JICA and be donated to the DOI after the termination of the Study. The Team promised to convey its request to the Government of Japan.
  - a. personal computer,
  - b. photocopy machine,
  - c. meteorology equipment,
  - d. hydrology equipment, and
  - e. water quality equipment.
6. The DOI requested the training of counterpart in Japan. The team promised to convey its request to the Government of Japan.

Kathmandu, December 16, 1992



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Mr. Y. L. Vaidya  
Director General,  
Department of Irrigation,  
His Majesty's Government  
of Nepal



---

Mr. Norikazu Tsujii  
Leader,  
Preparatory Study Team,  
Japan International  
Cooperation Agency

## LIST OF PARTICIPANTS

## 1. Nepalese Side

## Department of Irrigation

Mr. Y. L. Vaidya	Director General
Mr. C. P. Rauniyar	Superintending Engineer, Planning & Design Division
Mr. K. Sharma	Acting Director, Central Regional Irrigation Directorate
Mr. M. S. Paudel	Senior Divisional Engineer, Planing Section
Mr. I. S. Thapa	Divisional Engineer, Central Regional Irrigation Directorate
Mr. B. Karki	Section Officer, Foreign Aid Division, Ministry of Finance

## 2. Japanese Side

Mr. Norikazu Tsujii	Leader of Preparatory Study Team, JICA
Mr. Yukihiro Ogawa	Member of Preparatory Study Team, JICA
Mr. Takuji Tanaka	Member of Preparatory Study Team, JICA
Mr. Yutaka Nozaki	Member of Preparatory Study Team, JICA
Mr. Tadao Ito	Member of Preparatory Study Team, JICA
Mr. Norio Naito	Staff of JICA Nepal Office

MINUTES OF MEETING  
ON  
INCEPTION REPORT  
FOR  
THE MASTER PLAN STUDY  
ON  
THE REHABILITATION FOR GOVERNMENT DEVELOPED IRRIGATION  
SCHEMES  
IN  
THE KATHMANDU VALLEY IN THE KINGDOM OF NEPAL

1. DATE : April 8, 1993 11:00 a.m. - 1:00 p.m.
2. PLACE : Meeting Room of DOI
3. ATTENDING PERSONNEL : As per attached list
4. SUMMARY OF DISCUSSION

The JICA Study Team submitted the Inception Report to DOI and the Team Leader, Mr. T. Kawakatsu explained it to the attending DOI personnel. The Deputy Director General, Mr. C.P. Rauniyar expressed his general acceptance of the Report and discussion were made on almost every aspects of the project between DOI personnel and JICA Study Team, and both sides confirmed the following.

- (1) The basic concept and plan of operation for the Master Plan Study described in the Inception Report was accepted by DOI.
- (2) It was explained to JICA Team that a coordinating committee consisting of representatives from DOI and DOAD has been already in existence.
- (3) DOI has assigned the counterpart personnel for execution of the Master Plan Study as given in the attached list.  
DOI has also assigned a Project Manager who will act as coordinator between the officials concerned of the HMG/N and Japan.
- (4) DOI has made necessary arrangements for a suitable office space required for the Study Team.

*T. Kawakatsu*

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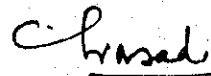
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- (5) The JICA Study Team explained that there shall be provisions of trainings for counterpart personnel in Japan and DOI took note of it and assured the Study Team for the nomination of suitable personnel for this purpose.

April 9, 1993

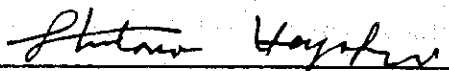


Mr. Takao Kawakatsu  
Team Leader  
JICA Study Team for the M/P Study on  
the Rehabilitation for  
the Government Developed  
Irrigation Schemes in the Kathmandu Valley



Mr. Y.L. Vaidya  
Director General  
Department of Irrigation,  
His Majesty's  
Government of Nepal

Witness



Shintaro Hayashi  
Leader of  
Advisory Committee



LIST OF ATTENDING PERSONNEL

Department of Irrigation , HMG/N

Mr. C.P. Rauniyar : DDG, DOI  
Mr. M.N. Aryal : Director, CRID  
Mr. K. Sharma : SDE , DOI  
Mr. S.P. Sharma : SDE , DOI  
Mr. M.S. Paudel : SDE , DOI  
Mr. Nobuharu Sasano : JICA Expert

Government of Japan

1. Advisory Committee

Mr. Shintaro Hayashi : Leader  
Mr. Akira Shimizu : JICA, Tokyo

2. Embassy of Japan

Mr. Hisaki Indou : Second Secretary

3. JICA Office Nepal

Mr. Norio Naito :  
Assistant Resident Representative

4. Study Team

Mr. Takao Kawakatsu : Leader  
Mr. Tatsumi Tanabe  
Mr. Masashi Shono  
Mr. Kazuyuki Ito

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**REGIONAL APPRAISAL AND CO-ORDINATION COMMITTEE**

1. REGIONAL DIRECTOR : DEPARTMENT OF AGRICULTURAL DEVELOPMENT,  
CENTRAL REGION
2. REGIONAL DIRECTOR : DEPARTMENT OF IRRIGATION,  
CENTRAL REGIONAL IRRIGATION DIRECTORATE
3. REGIONAL MANAGER : AGRICULTURAL DEVELOPMENT BANK, NEPAL
4. REGIONAL DIRECTOR : NATIONAL PLANNING COMMITTEE,  
CENTRAL REGIONAL OFFICE

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LIST OF COUNTERPART STAFF FOR M/P STUDY

<u>Name</u>	<u>Present Position</u>	<u>Task Assigned</u>
Mr. Keshav Sharma	SDE , CRID	PM / TL
Mr. M. L. Shrestha	Act. SDE , DIO , Kathmandu	D.T.L
Mr. N. D. Panday	DIE , DIO , Lalitpur	C.P. Staff
Mr. D.R. Pokharel	DIE , DIO , Bhaktapur	C.P. Staff
Mr. Rajeswar Yadav	Agro-Engineer, CRID	C.P. Staff
Mr. S. K. Shrestha	Agro-Economist , CRID	C.P. Staff
Mr. Ramesh Pradhan	Engineer, CRID	C.P. Staff

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**MINUTES OF MEETING  
ON  
PROGRESS REPORT (1)  
FOR  
THE MASTER PLAN STUDY  
ON  
THE REHABILITATION FOR GOVERNMENT DEVELOPED IRRIGATION  
SCHEMES IN THE KATHMANDU VALLEY**

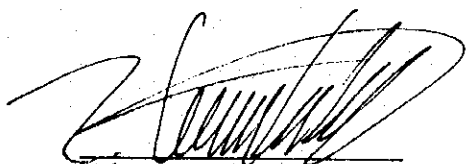
1. DATE : August 18, 1993 12:00 a.m. - 2:00 p.m.
2. PLACE : Meeting Room of Department of Irrigation (DoI)
3. ATTENDANCE : As per attached list
4. SUMMARY OF DISCUSSION

The JICA Study Team explained the contents of Progress Report (1) in the meeting. The contents of the Progress Report (1) were basically accepted by DoI with the following suggestions.

- (1) To propose more intensive cropping pattern to match with the water balance study to be conducted and show precisely anticipated yield and production after implementation of rehabilitation projects.
- (2) To clarify more elaborately the present conditions and problems with the existing irrigation schemes by summarising the results of inventory survey to make clear the insufficient performance of the existing irrigation schemes.
- (3) To explain on-going urbanized conditions in the Kathmandu Valley clearly and forecast its impact on the sustainability of the projects to be implemented with further recommendation to the Government for the necessary action to be taken in this regard.

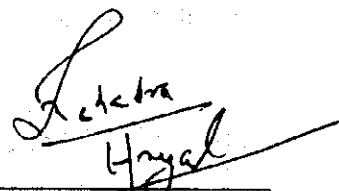
The DoI requested that the schedule for explanation of the Interim Report should be re-scheduled between Oct. 29, 1993 and Nov. 13, 1993 .

August 19, 1993



Takao Kawakatsu  
Team Leader

JICA Study Team  
For the Master Plan Study on  
the Rehabilitation for the  
Government Developed Irrigation Schemes  
in the Kathmandu Valley



Mahendra Nath Aryal  
Regional Director

Central Regional Irrigation  
Directorate  
Department of Irrigation,  
His Majesty's  
Government of Nepal

**LIST OF ATTENDING PERSONNEL****Department of Irrigation (DoI), IIMG/N**

- Mr. Mahendra Nath ARYAL : Regional Director,  
Central Regional Irrigation Directorate (CRID)
- Mr. Sharada Prasad SHARMA : Sr. Divisional Eng.  
Planning, Design & Research Division, DoI
- Mr. Madhu Sudan PAUDEL : Sr. Divisional Eng.  
Planning, Design & Research Division, DoI
- Mr. Keshab SHARMA : Sr. Divisional Eng.  
Deputy Director for CRID, Chief Counterpart
- Mr. Ramesh PRADHAN : Engineer, Counterpart, CRID
- Mr. Santosh Kokh SHRESTHA: Engineer, Counterpart, Agro-Economy, CRID
- Mr. Rajeswar YADAV : Engineer, Counterpart,  
Agriculture Engineer, CRID
- Mr. Nobuharu SASANO : JICA Expert for DoI

**Department of Agriculture, IIMG/N**

- Mr. Prem Lal CHITRAKAR : Regional Director,  
Central Regional Agriculture Development Office

**Nepal Planning Committee (NPC), IIMG/N**

- Mr. Ram Prasad SHRESTHA : Director, NPC Central Regional Office

**JICA Study Team**

- Mr. Takao Kawakatsu : Team Leader
- Mr. Tatsumi Tanabe : Co-Team Leader, Irrigation & Drainage  
Engineer cum O & M Expert
- Mr. Masashi Shono : Agro - Economist & Project Evaluation
- Mr. Kunita Okuwa : Hydrologist
- Mr. Kazuyuki Ito : Agronomist

MINUTES OF STAFF MEETING

No.1

1. Date : April 18, 1993
2. Place : Central Regional Irrigation Directorate
3. Attendance :

JICA Study Team

Takao KAWAKATSU  
 Tatemi TANABE  
 Masashi SHONO  
 Yuki MATSUO  
 Kunita OKUWA  
 Hiroshi NAGATA

Counterpart Personnel

Keshav SHARMA  
 Ramesh PRADHAN  
 S. K. SHRESTA  
 Rajeswar YADAV

## 4. Summary of Discussion

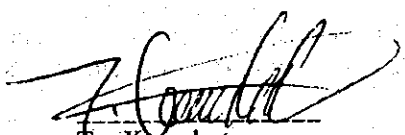
Team Leader of the JICA Study Team, T. Kawakatsu expressed the thanks for arrangement of office and attendance of the counterpart personnel, and explained activity of the team in last week.

Major work carried out last week was as follows :

- Field Reconnaissance together with the member of Advisory Committee of Japanese Government, Secretary of Embassy of Japan and in-charge of JICA Nepal Office. All member of the Advisory Committee of Japanese Government left for Tokyo on April 11, 1993.
- Arrangement for Office and Data Collection.
- Contract negotiation for Farm Survey with a local consultants firm.
- Second group of the Team arrived at Kathmandu on April 17, 1993.

As for office spaces and counterpart personnel, Project Manager expressed that library in first floor may be used for temporary works in addition to three rooms in third floor, and some overseers will be assigned as additional counterpart personnel.

5. Prepared by \_\_\_\_\_ and confirmed by \_\_\_\_\_

  
 T. Kawakatsu  
 Team Leader of  
 JICA Study Team

  
 Keshav Sharma  
 Project Manager  
 Chief Counterpart

**MINUTES OF STAFF MEETING**

No.2

1. Date : April 23, 1993
2. Place : Central Regional Irrigation Directorate
3. Attendance :

JICA Study Team  
 Takao KAWAKATSU  
 Tatemi TANABE  
 Kunita OKUWA  
 Masashi SHONO  
 Kazuyuki ITO  
 Yuki MATSUO  
 Hiroshi NAGATA

Counterpart Personnel  
 Keshav SHARMA  
 Rajeswar YADAV  
 Ramesh PRADHAN  
 S. K. SHRESTA  
 U. BARAL

## 4. Summary of Discussion

Each expert of the JICA Study Team attended explained his activity during a week, summary of finding un till this week end, required help by the Directorate and proposed schedule in coming week as summarized below :

- (1) Team Leader, T. Kawakatsu request further coordination to collect social data, especially regarding foreign aid for irrigation projects in past from India, UNDP, IBRD, ADB, and so on. In early next week, it is scheduled to visit National Planning Committee.
- (2) Irrigation Engineering : Reconnaissance survey on 14 schemes had been completed, beside he requested respective District Engineers, which are his counterpart personnel, to fill up questionnaire to identify Government developed schemes. The Directorate is requested to support them to reply as soon as possible, even if some of them will not be filled up.

Regarding the list of proposed priority schemes in previous document, some projects might be replaced with others.

Study team will consider priority not only from this list but also others identified. However, some schemes which will not be identified will not be considered.

- (3) Soil Survey and Land Use : Soil survey will be commenced from next week as in this week a local consultants firm was engaged to support soil survey and carry out soil analysis.
- (4) Hydrology : Such preparatory work for data collection as review of previous reports, check of equipment, request letters for authority concerned was done

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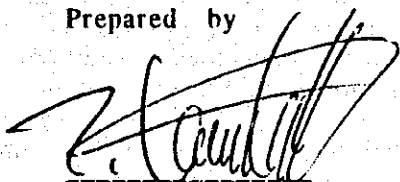
and data collection will be done in next week. Decision of location to be installed and cost estimation for installation of water level recorder and rain gauge will be made by the District Engineer.

- (5) **Agriculture** : Data collected through statistic offices were confirmed at three Agricultural District Offices and some selected farmers beside farm survey which has been ordered to a local consultants firm.
- (6) **Agro-Economy** : Sampling method for farm survey was instructed to the local consultants who was engaged for farm survey in the Project area, and some sample interview survey was made with the local consultant. Data collection from three Agricultural District Offices was made. The study area is delineated in 38 villages of which cultivated area, total household, population and farm household are as follows:

Area	Cultivated area	Total household	Total population	Farm household
Kathmandu Valley (130 villages)	17,673 ha	203,142	1,100,176	97,217
Study Area (38 villages)	9,527 ha	52,489	294,845	34,174

38

5. Prepared by



T. Kawakatsu  
Team Leader of  
JICA Study Team

and confirmed by



Keshav Sharma  
Project Manager  
Chief Counterpart

MINUTES OF STAFF MEETING

No.3

1. Date : April 30, 1993
2. Place : Central Regional Irrigation Directorate
3. Attendance :

JICA Study Team

Takao KAWAKATSU  
 Tatemi TANABE  
 Kunita OKUWA  
 Masashi SHONO  
 Kazuyuki ITO  
 Hiroshi NAGATA

Counterpart Personnel

Keshav SHARMA  
 Rajeswar YADAV  
 Ramesh PRADHAN  
 S. K. SHRESTA  
 U. BARAL

## 4. Summary of Discussion

Each expert of the JICA Study Team attended and explained their activity during a week, summary of finding until this week end, required help by the Directorate and proposed schedule in coming week as summarized below :

- (1) Team Leader, T. Kawakatsu explain general activity of the study team and request to supply data on ISP and to commence preliminary arrangement on farmer's participation including confirmation of the farmer's willing on the respective government developed irrigation schemes. Because, socio- and agro-economic data and data on agriculture show that investment of expensive cost for the rehabilitation on the Government developed irrigation schemes will not be economically feasible without more intensive farming and crop diversification or other incentives for the farmers. So, team requested the Regional Director to confirm the farmers' willing and intention to demand for realization of the rehabilitation projects on respective schemes.
- (2) Irrigation Engineering : Reconnaissance survey on 15 schemes had been completed in this week (29 schemes in total completed) and inventory list will be prepared based on these results. It is requested to supply data on O&M budget of the both Government managed and farmers' managed irrigation schemes. Chief Counterpart, Mr. K. Sharma requested to check geotechnical condition on the head works in Tikabairawa-II scheme specially, because its head works was washed out twice during a decade after reconstructed. In next week, field investigation on the remaining schemes including Tikabairawa-II will be carried out continuously.
- (3) Soil Survey and Land Use : Soil survey was commenced and is continued. Expert is in the field so he not attend in this meeting.



1/2

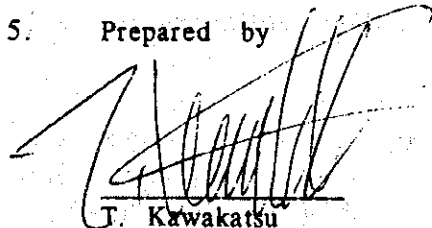


- (4) Hydrology : Data collection was commenced and continued, including field survey and investigation. Location to be installed water level recorder and rain gauge was decided and cost estimation is on going.
- (5) Agriculture and Agro-Economy : Data collection and their analysis including confirmation survey in the field were carried out and the followings are pointed out.
- (1) Rapid increase of population,
  - (2) Decrease of farm land,
  - (3) Prevalence of high yield productivity and modernized farming compare with other regions and
  - (4) Steep rise in land price

These facts will show much difficulty to verify economical feasibility on the Project. Additional data collection and confirmation survey will be continued in next week too.

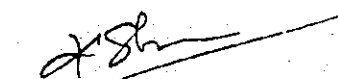
- (6) Team Leader request to Mr. K. Sharma to arrange meeting to explain our finding and discuss the way to study on the Project together with Regional Director, Deputy Director General and, if necessary, Director General of DOI in next Friday, May 7, 1993 at DOI, including JICA Expert Mr. N. Sasano, as Team Leader, T. Kawakatsu will leave Kathmandu on May 9, 1993.

5. Prepared by



T. Kawakatsu  
Team Leader of  
JICA Study Team

and confirmed by



Keshav Sharma  
Project Manager  
Chief Counterpart

## MINUTES OF DISCUSSION

1. Date : May 7, 1993
2. Place : Department of Irrigation (DoI)
3. Attendance : as per attached list
4. Summary of Discussion

After opening by Mr. Y. L. Vaidya, Director General of DoI, based on the Field Report prepared by the JICA Study Team, activities and major findings during the dry season study of Phase-I on the Master Plan Study on the rehabilitation of Government developed irrigation schemes in the Kathmandu valley were explained by the Team Leader and each expert as summarized below :

- (1) Team Leader expressed that the need of survey of farmers' willing and demand for the rehabilitation, because socio- and agro-economic data and data on agriculture show that heavy investment for the rehabilitation will not be so economically feasible without more intensive farming and crop diversification or other incentives for the farmers. Accordingly, CRID, DoI are kindly requested to collect "Project Request Form" in accordance with Design Manuals for Irrigation Projects in Nepal or equivalent survey on farmers' demand for the rehabilitation of each schemes. The schemes on which high priority will be given and farmers' demands will be surveyed, shall be selected in collaboration with the Study Team.

- (2) Irrigation Engineering : Inventory survey on 42 schemes was completed, and most of existing irrigation schemes need rehabilitation for their intake and canals, O&M of them is poor condition and farmers' association are yet to be developed.

Out of 71 existing government developed irrigation schemes, 11 schemes are outside of the Kathmandu valley, 4 schemes have been improved under Irrigation Sector Program (ISP) with ADB's Loan, and 11 schemes were approved and listed as ISP sub-projects.

- (3) Soil Survey and Land Use : Soil in Study area is divided into to two types, i.e. soil on the alluvial plain and soil on the terrace, and generally suitable for farming with their deep A and B horizons.
- (4) Hydrology : In the water supply plan for the Kathmandu and Lalitpur, there are two water resources development plans with construction of high dam in the Nakhu Khola and Khodu Khola of



which location are same location of the existing irrigation schemes, Tikabauraw and Kotkhu in Lalitpur district. In the selection of priority for the rehabilitation, this facts shall be considered.

(5) Agriculture and Agro-economy : According to the data collected so far the following are found,

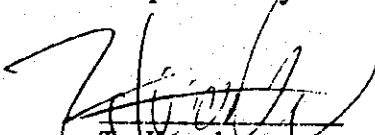
- (1) Rapid increase of population,
- (2) Decrease of farm land,
- (3) Prevalence of high yield productivity and modernized farming compare with other regions, and
- (4) Steep rise in land price.

These facts will show much difficulty to verify economic feasibility on the Project. Survey on farmers' intention and willing for the Project shall be investigated.

(6) As a conclusion, it is understood that water resources are more important for drinking water. Farmers' intention shall be surveyed, and formulation of the farmers' organization shall be accelerated beside confirmation through farm survey on farming practice and used quantities of fertilizer, machines, price of agricultural input, etc.

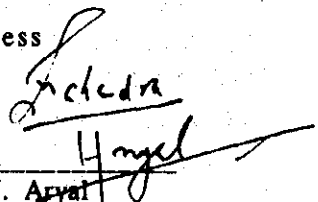
5. Prepared by

and confirmed by

  
T. Kawakatsu  
Team Leader of  
JICA Study Team

  
Keshav Sharma  
Project Manager  
Chief Counterpart

Witness

  
M. N. Ayyal  
Regional Director  
Central Regional  
Irrigation Directorate, DoI

**LIST OF ATTENDANCE****HMGN**

Mr. Y. L. Vaidya	Director General, DoI
Mr. M. N. Aryal	Regional Director, CRID
Mr. S. P. Sharma	Senior Divisional Engineer, DoI
Mr. M. S. Paudel	Senior Divisional Engineer, DoI
Mr. Keshav Sharma	Senior Divisional Engineer, CRID
	Project Manager, Chief Counterpart
Mr. Ramesh Pradhan	Engineer, CRID, Counterpart
Mr. S. K. Shrestha	Agro-Economist, CRID, Counterpart
Mr. Prem Lal Chitrakar	Regional Director, Department of Agricultural Development
Mr. Ram <sup>Prasad</sup> <del>Purad</del> Shrestha	Director, Central Regional Office, National Planning Committee
Mr. Nande R. Vaidya	Controller, Agricultural Development Bank, Nepal

**JICA Study Team**

Mr. Takao Kawakatsu	Team Leader
Mr. Tatsumi Tanabe	Co-Team Leader cum Irrigation and Drainage Engineer, Operation and Maintenance
Mr. Masashi Shono	Agro-economist cum Farmers' Organization and Project Economist
Mr. Kunita Okuwa	Hydrologist
Mr. Yuki Matsuo	Pedologist cum Land Use

## MINUTES OF STAFF MEETING(No. 4) Ref.No.

Date: July 2, 1993.

Place: Central Regional Irrigation Directorate

Attendance:

JICA Study TeamCounterpart Personnel

Masashi SHONO  
Tatsumi TANABE  
Kunita OKUWA  
Kazuyuki ITO

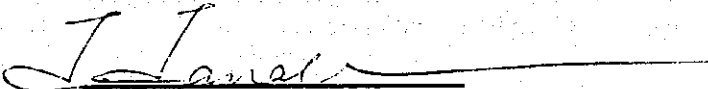
Keshav SHARMA  
Ramesh PRADHAN  
Rajeswar YADAV  
S.k. SHRESTA  
B.R. SHARMA

1. Summary of Discussions

- (1) Co-team leader of JICA study team, Mr. T. Tanabe, briefed the activities of JICA study team during the week after their arrival at Kathmandu on 25th of June 1993, and expressed thanks to Mr. Keshav Sharma for his arrangement of counterparts and rooms for the team. Mr. T. Tanabe also briefed the work schedule of JICA study team for the next week, including information of arrival dates of Messrs. T. Kawakatsu, team leader of JICA study team, Y. Matsuo and H. Nagata at Kathmandu.
- (2) Each expert of JICA study team also briefed their activities for the next week according to the work schedule submitted already to Mr. Keshav Sharma on 29th of June, 1993, and Mr. Keshav Sharma accepted their work plan.
- (3) A request was made by JICA study team to Mr. Keshav Sharma to provide additional two counterparts for Mr. K. Ito (Agronomist) and Mr. Y. Matsuo (Pedologist) to support their activities during the study. Responding to this, Mr. Keshav Sharma told JICA study team that DOI had already taken action for that and one counterpart for Mr. K. Ito is expected to attend him next week and another counterpart for Mr. Y. Matsuo is under request through Ministry of Agriculture.

Prepared by:

Confirmed by:



T. Tanabe  
Co-team Leader of  
JICA Study Team.



Keshav Sharma  
Project Manager,  
Chief Counterpart.

**MINUTES OF STAFF MEETING**

No.6

1. Date : July 9, 1993
2. Place : Central Regional Irrigation Directorate
3. Attendance :

JICA Study Team  
 Takao KAWAKATSU  
 Tatsumi TANABE  
 Kunita OKUWA  
 Masashi SHONO  
 Kazuyuki ITO

Counterpart Personnel  
 Keshav SHARMA  
 Rajeswar YADAV  
 S. K. SHRESTA  
 M. TIWARY  
 B. R. SHARMA

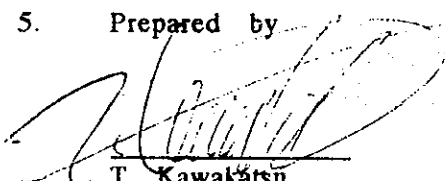
## 4. Summary of Discussion

Each expert of the JICA Study Team explained their activities during this week, required help by the Directorate and proposed schedule in coming week as summarized below :

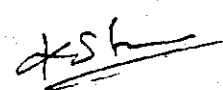
- (1) Counterpart personnel : As a counterpart in the field of agronomy, Mr. M. Tiwary was newly assigned since beginning of this week. However, counterpart in the field of pedology is not available so far. All other counterpart personnel has joined survey and study together with JICA study team.
- (2) Irrigation Engineering : Inventory survey's results were reviewed and list of additional inventory survey to be confirmed was prepared. Field survey will be resumed next week upon arrival of Irrigation and Drainage Design Engineer. Team leader confirmed to the Chief Counterpart the progress on the beneficiaries' (farmers') willing survey which was requested to CRID at the end of previous field study period.
- (3) Hydrology : Data collection was continued, and 80 to 90 percent of required data were collected. Counterpart, Mr. R. Pradhan is collecting some data today, accordingly, he could not attend this meeting. Study on availability of for some particular irrigation scheme will be commenced next week.
- (4) Agriculture and Agro-Economy : Data collection and their analysis including confirmation survey in the field were carried out, especially, vegetable farming and their market mechanism and prices.

5. Prepared by

and confirmed by



T. Kawakatsu  
 Team Leader of  
 JICA Study Team



Keshav Sharma  
 Project Manager  
 Chief Counterpart

**MINUTES OF STAFF MEETING**

No.7

1. Date : July 23, 1993
2. Place : Central Regional Irrigation Directorate
3. Attendance :

JICA Study Team

Takao KAWAKATSU

Tatsumi TANABE

Kunita OKUWA

Masashi SHONO

Kazuyuki ITO

Yuki MATSUO

Hiroshi NAGATA

Counterpart Personnel

Keshav SHARMA

Ramesh PRADHAN

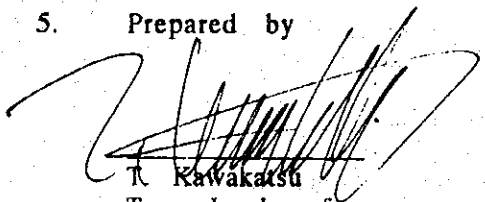
S. K. SHRESTA

4. Summary of Discussion


JICA Study Team explained activities during last two weeks. Due to the General Strike and Anti-Government demonstration, field work and study are little behind the schedule. However, study team is trying to make the best effort for successful completion of the study on time. A part of draft report on Irrigation Sector was submitted to the Chief Counterpart for his review and necessary arrangement to discuss with DoI officials. Major items discussed are summarized below :

- (1) Counterpart personnel : Although a counterpart in the field of pedology is not available, Mr. Matsuo continued the study without counterpart. All other counterpart personnel has joined and continued survey and study together with JICA study team.
- (2) Irrigation Engineering : Topographic survey on the head works site on two schemes were carried out. Survey results of the farmers' intention in the form of the "Request Form" of rehabilitation of 14 schemes were given to the Study team. Remaining some reports in Nepalese language will be given after compilation in English version, in due course.
- (3) Other Sectors : Study on collected data was carried out.
- (4) After reading a draft paper to select priority schemes which has been given from Irrigation Engineer to the Chief Counterpart, necessary arrangement for explanation to the DoI will be proceeded.

5. Prepared by

  
 Takao Kawakatsu  
 Team Leader of  
 JICA Study Team

and confirmed by

  
 Keshav Sharma  
 Project Manager  
 Chief Counterpart

**MINUTES OF STAFF MEETING**

No.8

1. Date : July 30, 1993
2. Place : Central Regional Irrigation Directorate
3. Attendance :

JICA Study Team

Takao KAWAKATSU

Tatsumi TANABE

Kunita OKUWA

Masashi SHONO

Kazuyuki ITO

Yuki MATSUO

Hiroshi NAGATA

Counterpart Personnel

Keshav SHARMA

Ramesh PRADHAN

## 4. Summary of Discussion

JICA Study Team explained activities during last week. The most of field survey scheduled in this field study period was finished except some supplementary survey to confirm the data and information collected recently, in spite of limitation of fuel supply in the Kathmandu valley due to the interruption of surface transportation by flood damage. Major items discussed are summarized below :


- (1) Counterpart personnel : Mr. S. N. Mandal was assigned as a counterpart of Mr. Matsuo, Soil and Land Use Expert. All counterpart personnel continued survey and study together with JICA study team.
- (2) Irrigation Engineering : Check survey scheduled for some irrigation schemes in this study period was finished.
- (3) Other Sectors : Study on collected data was carried out.
- (4) Although there are scheduled two National Holidays in Next week, one on 10-th August, Study Team will continue their study and prepare the Progress Report by the Mid-August. Fortunately, three days traffic strike which was scheduled in Mid-August will be postponed by about two weeks. The Chief Counterpart is kindly requested to arrange to hold a meeting with DoI for explanation and discussion on the Progress Report on middle of third week of August, 1993.

5. Prepared by

and confirmed by



T. Kawakatsu  
Team Leader of  
JICA Study Team



Keshav Sharma  
Project Manager  
Chief Counterpart



**MINUTES OF STAFF MEETING**

No.9

1. Date : August 06, 1993
2. Place : Central Regional Irrigation Directorate
3. Attendance :

JICA Study Team  
 Takao KAWAKATSU  
 Tatsumi TANABE  
 Kunita OKUWA  
 Masashi SHONO  
 Kazuyuki ITO

Counterpart Personnel  
 Keshav SHARMA  
 Rajeswar YADAV  
 Ramesh PRADHAN  
 S. K. SHRESTHA

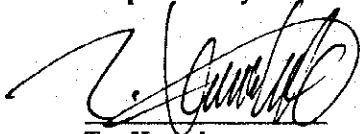
## 4. Summary of Discussion

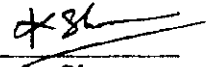
JICA Study Team explained activities during last week. Major items discussed are summarized below :

- (1) Personnel : Mr. H. Nagata and Mr. Y. Matsuo left Kathmandu for Tokyo this day, after finishing their duty in this study period.
- (2) Engineering sector : Preparation of the progress report was commenced. An abstract on the part of the selection criteria and selected schemes tentatively, were explained to DDG of DoI last Thursday. "Request Form".for the schemes in Kathmandu district will be given to the Team at the beginning of next week.
- (3) Other Sectors : Preparation of the progress report was commenced.
- (4) As the progress report will be prepared by the middle of August, a Joint meeting among DoI, Study Team and authority concerned will be scheduled on August 18, 1993 at DoI for explanation and discussion on the Progress Report.

5. Prepared by

and confirmed by

  
 T. Kawakatsu  
 Team Leader of  
 JICA Study Team

  
 Keshav Sharma  
 Project Manager  
 Chief Counterpart

**MINUTES OF STAFF MEETING**

No.10

1. Date : August 13, 1993
2. Place : Central Regional Irrigation Directorate
3. Attendance :

JICA Study Team  
 Takao KAWAKATSU  
 Tatsumi TANABE  
 Kunita OKUWA  
 Masashi SHONO  
 Kazuyuki ITO


Counterpart Personnel  
 Keshav SHARMA  
 Rajeswar YADAV  
 Ramesh PRADHAN  
 S. K. SHRESTHA  
 M. TIWARY


4. Summary of Discussion

JICA Study Team explained activities during last week. Major items discussed are summarized below :

- (1) Report : The Progress Report (1) was drafted up by this week end. Each one copy of the draft report was distributed to all counterparts who were requested to give team comments on it, if any, within next Sunday, so that the Report will be finalized on Monday.
- (2) As the Progress Report (1) will be printed on next Monday and be submitted to DoI on Tuesday, counterparts are requested to distribute them to key personnels who will attend on the Joint meeting among DoI, Study Team and authority concerned, which is scheduled on August 18, 1993 at DoI.

5. Prepared by \_\_\_\_\_ and confirmed by \_\_\_\_\_

  
 Takao Kawakatsu  
 Team Leader of  
 JICA Study Team

  
 Keshav Sharma  
 Project Manager  
 Chief Counterpart



