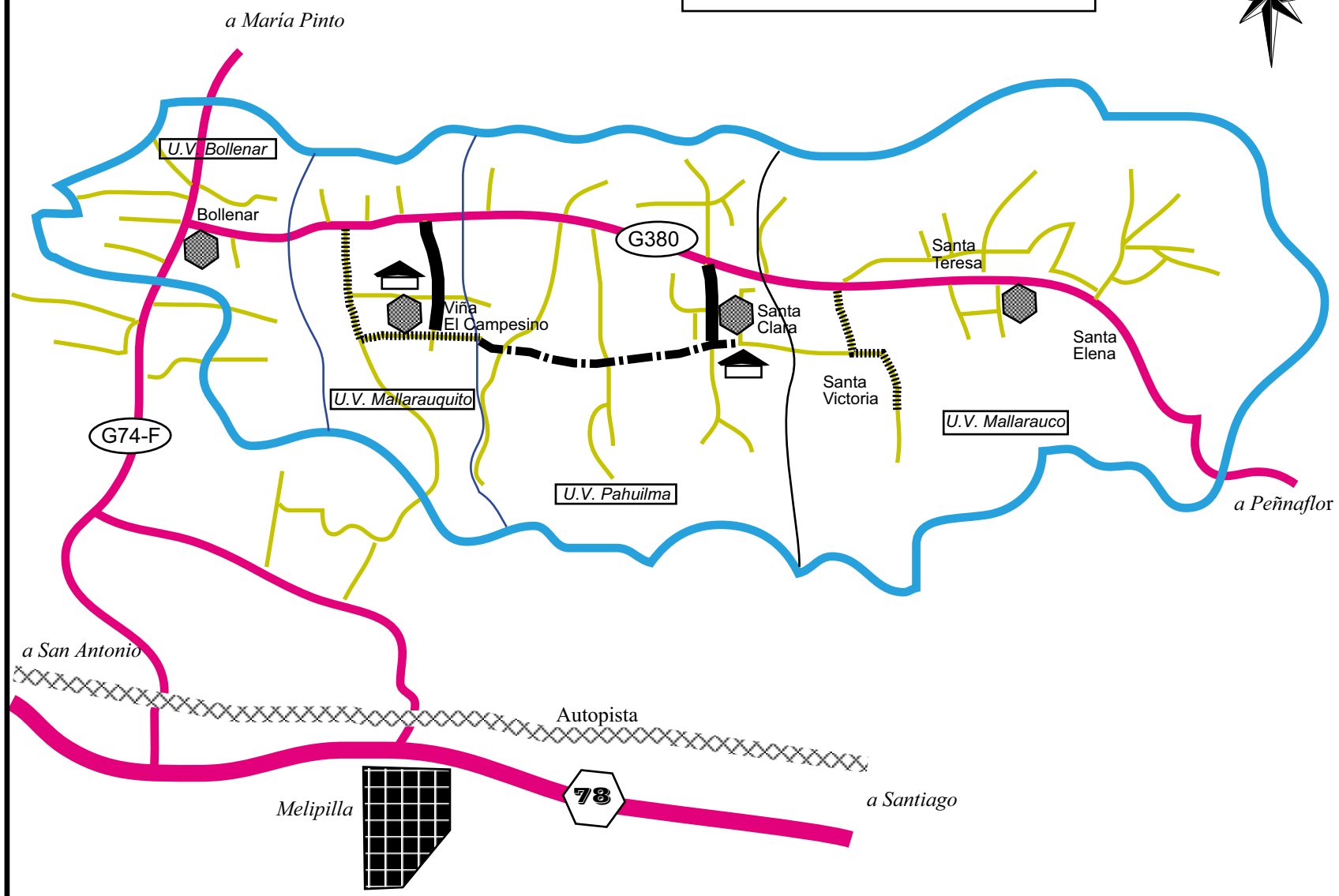


Area Mallarauco



凡 例










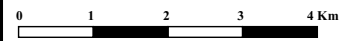
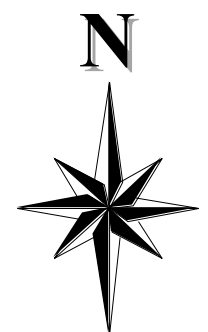
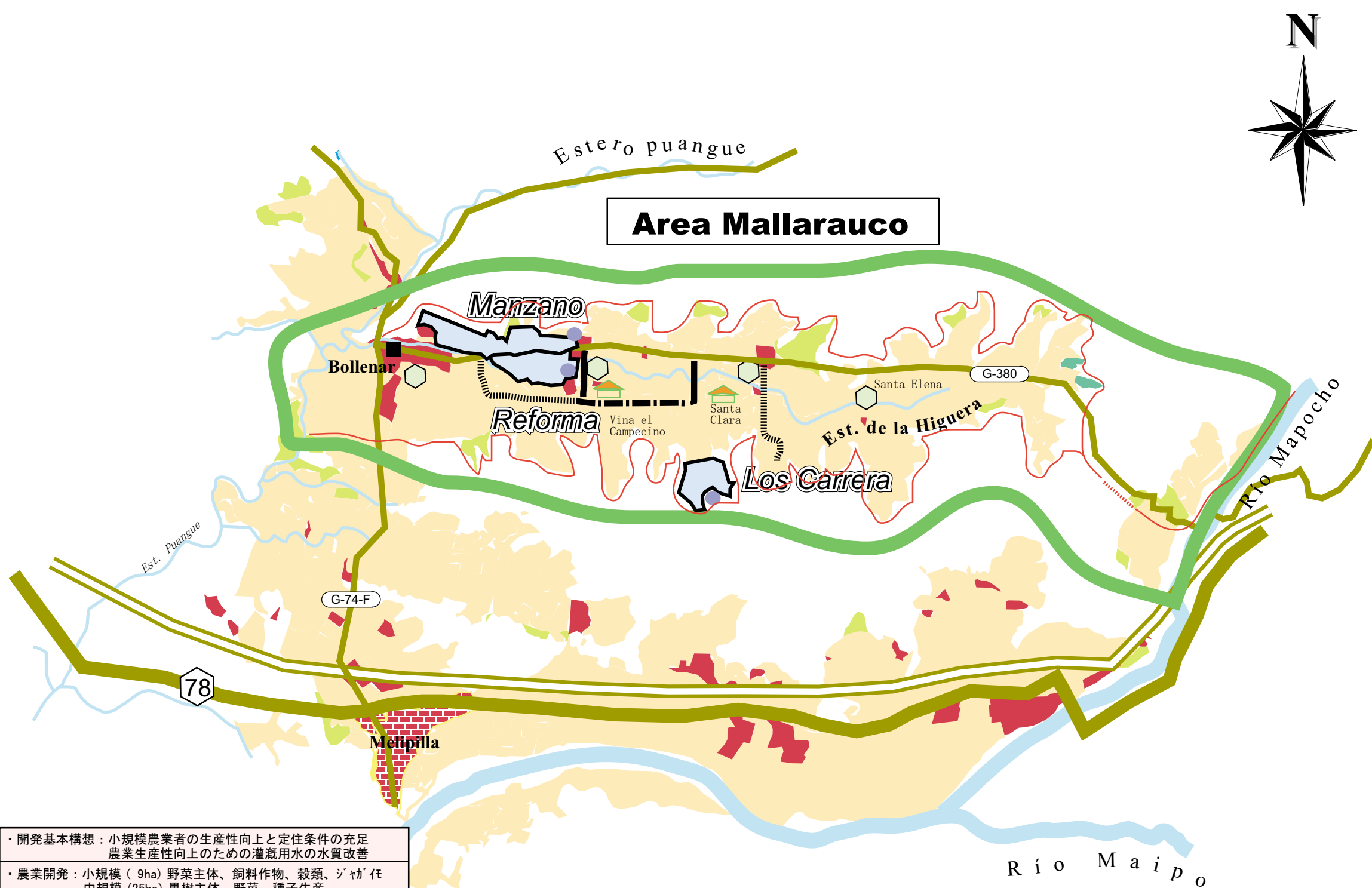
-  幹線道路 (MOP)
-  Comuna 管理道路
-  Mallarauco 地区
-  U. V. 境界
-  計画舗装道路
-  計画改良道路
-  新設道路
-  地区連帯センター
-  集落排水処理

図 2.2.2
生活基盤整備計画図



DESARROLLO AGRICOLA Y
MANEJO DE AGUAS
DEL AREA METROPOLITANA
JICA - CNR

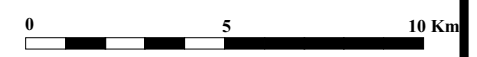


凡 例

- 農用地
- 牧草地
- 林地
- 市街地
- 集落地
- 未利用地
- 河川
- 高速道路
- 国道
- 現況幹線道路
- 現況支線道路
- FS 対象地区
- Mallarauco 用水路
- 水質改善地区
- 計画舗装道路
- 計画改良道路
- 新設道路
- 地区連帯センター
- 集落排水処理

- ・ 開発基本構想：小規模農業者の生産性向上と定住条件の充足
農業生産性向上のための灌漑用水の水質改善
- ・ 農業開発：小規模（9ha）野菜主体、飼料作物、穀類、ジャガイロ
中規模（25ha）果樹主体、野菜、種子生産
- ・ 農業支援：水質改善施設整備体制
施設有効利用体制
支援・活動の拠点施設整備
- ・ 生活基盤整備：道路整備（L=26.2km）
集落排水処理（4カ所）、地区連帯センター（2カ所）
- ・ 水質改善整備：水質改善面積（Los Carrera 135.2ha、Reforma
488.7ha、Manzano 418.7ha）
目標水質（BOD 20ppm 大腸菌群類 23MPN/100ml）
- ・ 生産基盤整備：灌漑管路（L=44.0km）、取水口改善（3カ所）
分水工（77カ所）、貯水槽（3カ所）、ポンプ（4台）

図 2.2.3
Mallarauco 地区
全体計画図



DESARROLLO AGRICOLA Y
MANEJO DE AGUAS
DEL AREA METROPOLITANA
JICA - CNR

添 付 資 料

**SCOPE OF WORK
FOR
THE STUDY
ON
AGRICULTURAL DEVELOPMENT AND WATER MANAGEMENT
IN
METROPOLITAN AREA , CHILE**

**AGREED UPON BETWEEN
NATIONAL IRRIGATION COMMISSION
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY**

Santiago, November 13 , 1997



Mr. Ernesto Schulbach B.
Executive Secretary
National Irrigation Commission

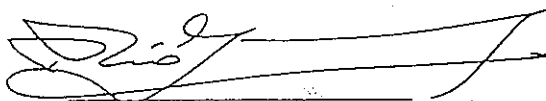


Mr. Germán Quintana P.
Intendant
Metropolitan Region



Mr. Shigenari Koga
Leader, Japanese
Preparatory Study Team
Japan International
Cooperation Agency

Witnessed by



Mr. Francisco Vio G.
Executive Director
International Cooperation Agency
of Chile

I. Introduction

In response to the request of the Government of the Republic of Chile (hereinafter referred to as "the Government of Chile"), the Government of Japan has decided to conduct the Study on Agricultural Development and Water Management in Metropolitan Area, Chile (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 the Government of Chile.

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 :

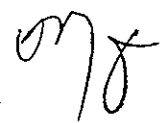
1. To formulate a master plan for agricultural development and water management reflecting upon environmental conditions in metropolitan area, Chile.
2. To conduct a feasibility study for the agricultural development plan(s) in the priority project area(s).
3. To carry out technology transfer to the Chilean counterpart personnel through on-the-job training in the course of the Study.

III. Study Area

The Study covers the Metropolitan Region and the Province of San Antonio in the Fifth Region, and the total area for the master plan is about 3,200 square kilometers which consists of actual and potential irrigated areas. (ANNEX I)

IV. Scope of the Study

In order to achieve the above objectives, the Study will consist of the following two phases:

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1. Phase I (Master Plan)

1.1. To collect and analyze existing data and information and to carry out field survey including the following components:

- (1) Natural conditions
- (2) Socio-economic conditions
- (3) Soil conditions and land use
- (4) Crop production
- (5) Livestock and pasture
- (6) Agricultural and rural infrastructure
- (7) Irrigation and drainage
- (8) Operation and maintenance of irrigation and drainage facilities
- (9) Agricultural supporting systems (farmers organization, research, training and extension services, etc.)
- (10) Marketing system
- (11) Water demand and system of water resources management for the various sectors
- (12) Domestic waste water from urban areas
- (13) Environmental aspects
- (14) Legal aspects
- (15) Others

1.2. To review the existing development plan(s) and project(s) in the Study Area.

1.3. To identify potential of water resources, problems and constraints.

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- 1.4. To implement Initial Environmental Examination (IEE).
- 1.5. To prepare the water optimization plan for the various sectors.
- 1.6. To formulate a Master Plan for the agricultural development and water management reflected upon environmental conditions in the Study Area.
- 1.7. To identify the priority project area(s) through the Master Plan study.

2. Phase II (Feasibility Study)

- 2.1. To collect data and information in the selected project area(s) through additional survey.
- 2.2. To conduct the feasibility study for the priority project area(s) including the following components:
 - (1) Agricultural development plan
 - (2) Groundwater resources development plan, if necessary
 - (3) Irrigation and drainage plan
 - (4) Operation and maintenance plan of irrigation and drainage facilities
 - (5) Environmental conservation plan
 - (6) Preliminary design of infrastructure
 - (7) Farmers' organization and its supporting plan
 - (8) Implementation schedule
 - (9) Estimation of the project costs and benefits
 - (10) Evaluation of the project
 - (11) Conclusions and Recommendations



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V. Study schedule

The Study will be carried out in accordance with the attached tentative work schedule.(ANNEXII)

VI.Reports

JICA will prepare and submit the following reports in English and Spanish to the Government of Chile.

1. Inception Report

Twenty (20) copies at the commencement of the Phase I study
(Spanish version only).

2. Progress Report (1)

Twenty (20) copies at the end of the work in Chile of the Phase I study
(Spanish version only).

3. Interim Report

Twenty (20) copies at the commencement of the Phase II study
(Spanish version only).

4. Progress Report (2)

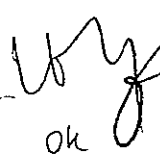
Twenty (20) copies at the end of the work in Chile of the Phase II study
(Spanish version only).

5. Draft Final Report

Twenty (20) copies at the end of the Phase II study. The Government of Chile will provide its comments on the Draft Final Report to JICA within forty(40) days after receiving the Draft Final Report.

6. Final Report

Fifty (50) copies in Spanish and English (only Main Report) within two (2) months after the receipt of comments on the Draft Final Report.


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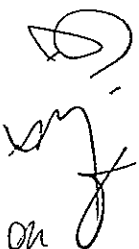
In case any doubt arises in interpretation, English text shall prevail.

VII. Undertakings of the Government of Chile

1. To facilitate smooth conduct of the Study, the Government of Chile 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 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 to be brought into and out of the Republic of Chile 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 the utilization of the funds introduced into the Republic of Chile 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,
- (7) To secure permission for the Japanese study team to take all data and documents (including photographs and maps) related to the Study out of the Republic of Chile to Japan by the Japanese study team, and
- (8) To provide medical services as needed.

2. The Government of Chile shall bear claims, if any arises, against the members 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.

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3. National Irrigation Commission (hereinafter referred as "CNR") shall act as a counterpart agency to the Japanese study team and also as a coordinating body in relation to other Chilean organizations concerned for the smooth implementation of the Study.

4. CNR shall, at its own expense, provide the Japanese study team with the following, in cooperation with other Chilean organizations concerned:

- (1) available data and information related to the Study,
- (2) counterpart personnel,
- (3) suitable office space with necessary equipment and furniture in Santiago and
- (4) credentials or identification cards.

VIII. Undertakings of JICA

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

- (1) To dispatch, at its own expense, the study team to Chile,
- (2) To pursue technology transfer to the Chilean counterpart personnel in the course of the Study.

IX. Consultation

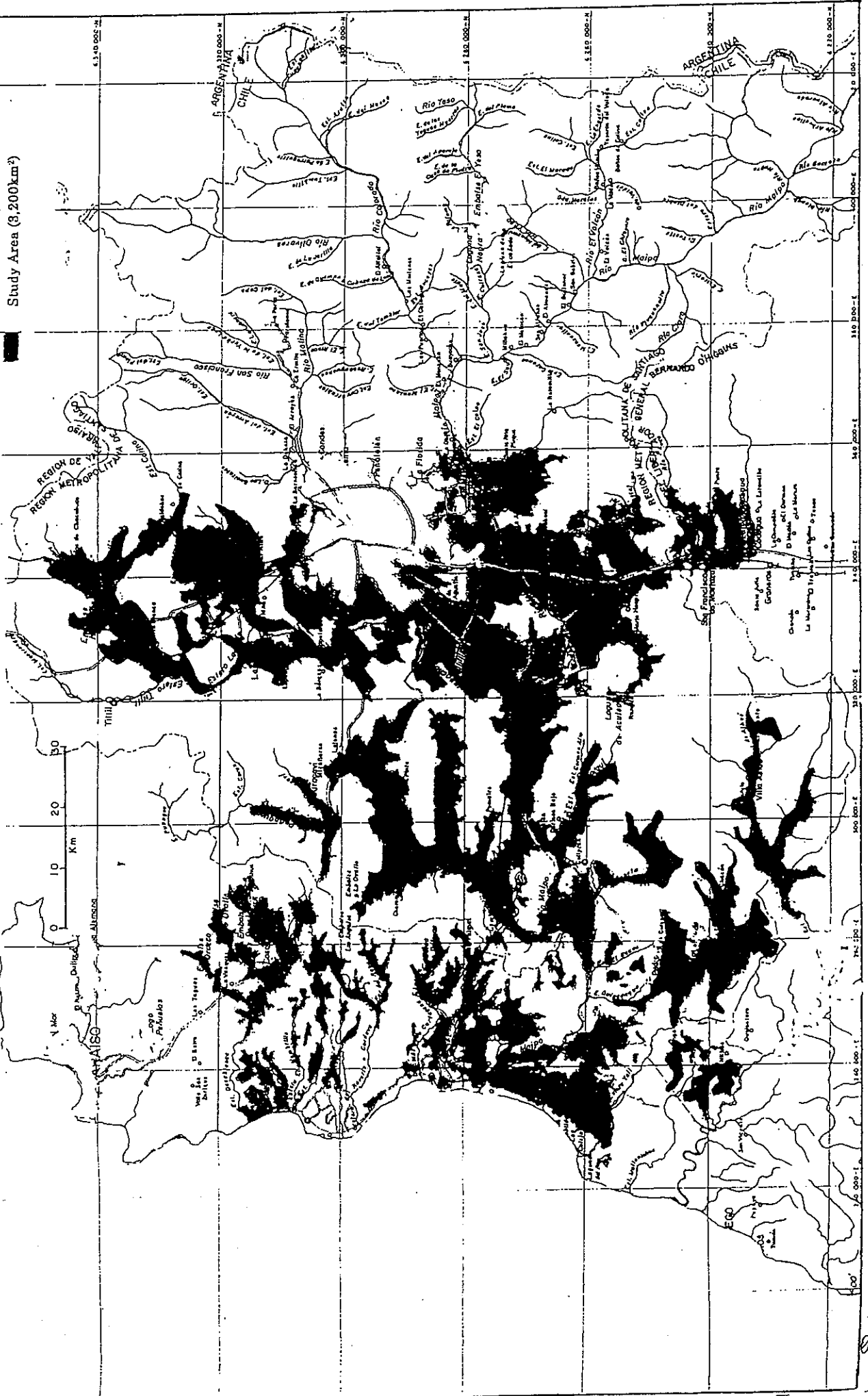
JICA and the Government of Chile shall consult with each other in respect of any matter that may arise from or in connection with the Study.

X. Others

The Scope of Work is prepared both English and Spanish. In case of any discrepancy of translation arises in interpretation, the English text shall prevail.

ANNEX I

Location Map of Study Area



W 5 3 1

ANNEX II

TENTATIVE WORK SCHEDULE

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ITEM																	
Work in Chile																	
Work in Japan																	
Phase	← PHASE I						PHASE II →										
Report	△ Ic/R			△ P/R(I)		△ It/R				△ P/R(II)				△ Df/R			△ F/R

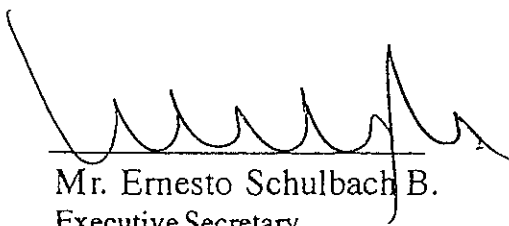
(Remarks)

- Ic / R : Inception Report
- P / R(I) : Progress Report(1)
- It / R : Interim Report
- P / R(II) : Progress Report(2)
- Df / R : Draft Final Report
- F / R : Final Report
- ◎ : Comments on Df / R by Chile side

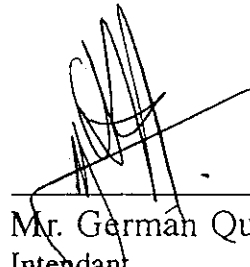
**MINUTES OF MEETINGS
ON
SCOPE OF WORK
FOR
THE STUDY
ON
AGRICULTURAL DEVELOPMENT AND WATER MANAGEMENT
IN
METROPOLITAN AREA , CHILE**

**AGREED UPON BETWEEN
NATIONAL IRRIGATION COMMISSION
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY**


Santiago, November 13 , 1997



Mr. Ernesto Schulbach B.
Executive Secretary
National Irrigation Commission

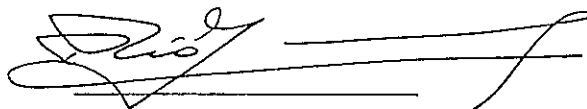


Mr. German Quintana P.
Intendant
Metropolitan Region



Mr. Shigenari Koga
Leader, Japanese
Preparatory Study Team
Japan International
Cooperation Agency

Witnessed by



Mr. Francisco Vio G.
Executive Director
International Cooperation Agency
of Chile

The preparatory study team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Shigenari Koga visited the Republic of Chile from November 3 to November 22, 1997 for the purpose of discussing and exchanging views in relation to the Study on Agricultural Development and Water Management in Metropolitan Area, Chile (hereinafter referred to as " the Study") with the officials concerned of the Government of the Republic of Chile (hereinafter referred to as " the Government of Chile ").

As a result of the discussions, the Government of Chile and the Team mutually agreed to the Scope of Work for the Study .

The following Minutes have been prepared to confirm the main issues discussed and matters agreed upon by both sides in connection. The list of participants in a series of meetings is attached as ANNEX.

1. The Study will be carried out mainly aiming at the agricultural development taking into account environmental conditions in metropolitan area.
2. For the smooth and effective implementation of the Study in terms of technical and administrative aspects, it was mutually agreed to establish a Steering Committee which shall be comprised of various organizations concerned with the Study. The chairperson of the Committee shall be National Irrigation Commission (hereinafter referred to as " CNR "). Basically, the Committee will be held each time when the Japanese study team explains the Reports and/or if necessity arises. The Committee shall be formed by the following institutions:
 - National Irrigation Commission (CNR)
 - Metropolitan Region Government (IRM)
 - Ministry of Agriculture (MA)
 - Ministry of Publics Works (MOP)
3. The Team requested that counterpart personnel for each field to the Japanese study team, necessary for smooth and effective implementation of the Study, be assigned during the Study period. The Government of Chile promised to be responsible for the assignment.
4. The Government of Chile requested to prepare an operational simulation model for the

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hydrological system, on condition that the Government of Chile provides the practical groundwater model based on the existing data and its analysis of CNR's survey without additional survey by the study team about this.

The Team promised to convey the request to the JICA headquarters.

5. The Summary report will be separated from Main volume of Final Report in Spanish.

6. The Government of Chile requested one hundred(100) copies of reports in Spanish for the summary of Final Report.

The Team promised to convey the request to the JICA headquarters.

7. The Government of Chile requested that the draft final report will be submitted to the CNR one(1) month before the explanation in the Joint Committee meeting, on condition that the Government of Chile will provide its comments on the Draft Final Report to JICA within ten (10) days after the explanation.

The Team promised to convey the request to the JICA headquarters.

8. The Government of Chile requested the counterpart training in Japan.

The Team promised to convey the request to the JICA headquarters.

9. The Government of Chile promised to provide the Study team with desks, chairs and the exclusive use of one telephone line, telephone with facsimile function, one personal computer and secretary in the office.

10. The Government of Chile agreed that the Final Report would be available to any person who has interests in the Study.

11. The Minutes of Meetings is prepared both English and Spanish. In case of any discrepancy of translation arises in interpretation, the English text shall prevail.

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ANNEX

List of Participants

Chilean Side

National Irrigation Commission

Mr. Marcial Gonzalez S.	Director, Department of Survey
Mr. Mario Fajardo R.	Agricultural Engineer, Department of Survey
Mr. Cesar Arriagada A.	Civil Engineer, Department of Survey

Metropolitan Region Government

Mr. Fernando Cacho A.	Chief, Department of Environment
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Ministry of Agriculture

Mr. Rolando Nunez H.	SEREMI
Ms. Pilar Matamala E.	Agricultural Engineer, SEREMI
Mr. Mario Gallardo P.	Agricultural Engineer, SAG
Mr. Carlos Barrientos	Agricultural Engineer, INDAP
Mr. Carlos Weber	Regional Director, CONAF

Ministry of Public Works

Mr. Alberto Calatroni	Geographer, SEREMI
Mr. Edgardo Lara	Agricultural Engineer, Irrigation Directorate

International Cooperation Agency of Chile

Mr. Ivan Mertens	Coordinator, Sectorial
Ms. Adriana Lagos	Coordinator, Asia Pacific
Mr. Mitsuo Oba	JICA Expert in AGCI

Japanese Side

Preparatory Study Team

Mr. Shigenari Koga	Leader
Mr. Haruyuki Sato	Member
Mr. Atsushi Mori	Member
Mr. Kazuya Suzuki	Member
Mr. Yoshinori Kanetsuna	Member
Mr. Yoshimi Sugano	Member

JICA Chile Office

Mr. Kiyotaka Otsuki	Assistant Resident Representative
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Embassy of Japan

Mr. Kanehiko Shindo	First Secretary
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