# APENDICE B

# MINUTAS DE REUNION

MINUTES OF MEETINGS
FOR
THE MASTER PLAN STUDY
ON
FLOOD CONTROL IN THE NORTHERN RURAL REGION OF SANTA CRUZ
IN
THE REPUBLIC OF BOLIVIA

AGREED UPON BETWEEN
SANTA CRUZ REGIONAL DEVELOPMENT CORPORATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

SANTA CRUZ,DECEMBER 14,1994
LA PAZ,DECEMBER 15,1994

Uc.RONALD PARADA GIL
ACTING PRESIDENT
SANTA CRUZ REGIONAL
DEVELOPMENT CORPORATION

Ing.KENJI KIYOMIZU
LEADER,
PREPARATORY STUDY TEAM,
JAPAN INTERNATIONAL
COOPERATION AGENCY

Uc.ALFONSO E.KREIDLER GILLAUX
SECRETARY,
NATIONAL SECRETARIAT OF
PLANNING,MINISTRY OF
SUSTAINABLE DEVELOPMENT
AND ENVIRONMENT

Ing. EDGAR TALAVERA SOLIZ
SECRETARY,
NATIONAL SECRETARIAT OF
AGRICULTURE AND CATTLE RAISING,
MINISTRY OF ECONOMIC
DEVELOPMENT

Uc.MARCELO MENDEZ FERRY
UNDERSECRETARY OF PUBLIC INVESTMENT
AND EXTERNAL FINANCE,MINISTRY OF
FINANCE

In response to the request of the Government of the Republic of Bolivia, (hereinafter referred to as "the Government of Bolivia") the Government of Japan has decided to conduct a Master Plan Study on Flood Control in the Northern Rural Region of Santa Cruz (hereinafter referred to as "the Study"), through Japan International Cooperation Agency (hereinafter referred to as "JICA").

The JICA preparatory study team, headed by Kenji Kiyomizu,visited Bolivia from December 2,1994 to December 17,1994, where it was held a series of meetings with Santa Cruz Regional Development Corporation (hereinafter referred to as "CORDECRUZ"), and other authorities concerned of the Government of Bolivia. The list of attendants is shown in appendix.

During the visit, both sides agreed to the Scope of Work for the Study, which defines the terms and conditions of the Study and implementing and coordination in Bolivia and Japan. In addition to the Scope of Work, the JICA preparatory study team and the Bolivian representatives confirmed the following.

1. The purpose of the Study is to formulate a comprehensive flood control master plan in rural area,which aims to mitigate flood damages mainly concerning agricultural activities in farming area.

2. The Study area includes Pailon and Chane river basins , and parts of Grande, Piray and Yapacani river basins.As to Piray river basin, however, there already exists a river management plan named "Plan directivo de acondicionamiento de la cuenca del Rio Piray". Accordingly,as far as Piray river basin is concerned,the Study shall be limited to collection of existing data (such as hydrological data) for necessity in connection with the other river basins.But if it would be recognized necessary in the course of the Study,more detailed study (than existing data collection) for Piray river basin will be conducted in harmony with the aforesaid river management plan and within the purpose of the Study.

3. The both sides agreed that the target year of the Study shall be decided in the first work period of the Study Team in Bolivia through mature discussions about the conditions in the Study Area.

4. CORDECRUZ shall provide coordination required with other government agencies and non-government agencies to ensure smooth and accurate conduct of the Study.

5. At the request of the Bolivian side, the Japanese Study Team will prepare Inception, Draft Final and Final Reports in Spanish as well as English, and also prepare summaries of Progress and Interim Reports in Spanish for reference. However, drawings and diagrams will be remained in English.

6. As to the counterpart personnel, CORDECRUZ agreed to assign enough engineers/technicians during the conduct of the Study.

7. CORDECRUZ will provide two vehicles with drivers. The Japanese side will cover the rest of the transportation expenses.

8. CORDECRUZ will provide suitable office space with necessary equipment and furniture except copy machine, facsimile and computer in Santa Cruz City. Rest of the equipment necessary for the Study will be prepared by the Japanese side.

9. The Bolivian side requested that counterpart personnel will be trained in Japan. The Japanese side will convey the request to JICA headquarters.

10. The Japanese side suggested that it will be effective to hold a seminar at the end of the Study. At the suggestion, the Bolivian side also agreed the effectiveness and requested to perform a seminar related to flood control in rural area. The Japanese side replied that they will make effort to meet the request.

11. As to the disclose of the Final Report, the Bolivian side expressed that it shall be opened to the public at present opinion, but the final request about the disclose will be made after the explanation of Draft Final Report.

The Scope of Work and the Minutes of Meetings are prepared in both English and Spanish. In case any doubt arises in interpretation, the English text shall prevail.

Appendix

List of Attendants

Bolivian side

<Santa Cruz>

| | |
|---|---|
| 1.Lic.Ronald Parada Gil | Acting President,CORDECRUZ |
| 2.Ing.Mario Ribera Velez | Director,Team of Natural Resources, CORDECRUZ |
| 3.Ing.Gustavo Pereyra Carvallo | Chief,Department of Rural Agriculture and Cattle Raising,CORDECRUZ |
| 4.Ing.Juan de Dios Algaranaz | Expert of Soil,Team of Natural Resources,CORDECRUZ |
| 5.Ing.Manlio Alberto Roca Zamora | Expert of Irrigation and Drainage, CORDECRUZ |

<La Paz>

| | |
|---|---|
| 1.Lic Alfonso E. Kreidler G. | Secretary,National Secretariat of Planning, Ministry of Sustainable Development and Environment |
| 2.Ing.Edgar Talavera Solis | Secretary,National Secretariat of Agriculture and Cattle Raising,Ministry of Economic Development |
| 3.Ing.Oscar Ponce Blanco | Undersecretary,National Secretariat of Agriculture and Cattle Raising,Ministry of Economic Development |
| 4.Ing.Fernando Landivar Bowles | Undersecretary,National Secretariat of Agriculture and Cattle Raising,Ministry of Economic Development |
| 5.Lic.Marcelo Machicao Barbery | Director,International Cooperation Division, Under Secretariat of Public Investment and External Finance, Ministry of Finance |
| 6.Lic.Pilar Rollano | Staff,International Cooperation Division, Under Secretariat of Public Investment and External Finance, Ministry of Finance |

Japanese side

<Preparatory Study Team>

| | |
|---|---|
| 1.Ing.Kenji Kiyomizu | Leader/ Development Specialist, Institution for International Cooperation, JICA |
| 2.Ing.Yukio Miyaishi | Member/ Senior Staff,Design Division, Construction Department,Tokai Administration Office,Ministry of Agriculture,Forestry and Fisheries |
| 3.Ing.Kojiro Matsumoto | Member/ Second Development Study Division, Social Development Study Department, JICA |
| 4.Ing.Nobuyuki Okabe | Member/ Japan Engineering Consultants Co.,Ltd. |
| 5.Lic.Masami Adaniya | Member/ Japan International Cooperation Center |

<Santa Cruz>

| | |
|---|---|
| 1.Lic.Norioki Honda | Director,Santa Cruz Branch of JICA Bolivia Office |
| 2.Ing.Tokuo Ikeda | Technical Cooperation Staff,Santa Cruz Branch of JICA Bolivia Office |
| 3.Lic.Fusayasu Kamiya | Technical Cooperation Staff,Santa Cruz Branch of JICA Bolivia Office |

<La Paz>

| | |
|---|---|
| 1.Lic. Seiji Tomiyasu | Assistant Resident Representative,JICA Bolivia Office |
| 2.Lic.Carlos Omoya | Technical Cooperation Staff,JICA Bolivia Office |

MINUTES OF MEETINGS
FOR
THE MASTER PLAN STUDY ON FLOOD CONTROL IN THE NORTHERN RURAL REGION OF SANTA CRUZ IN THE REPUBLIC OF BOLIVIA

AGREED UPON BETWEEN

SANTA CRUZ REGIONAL DEVELOPMENT COOPERATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

SANTA CRUZ, APRIL 13, 1995

LA PAZ, APRIL , 1995

Lic. FREDY TEODOVICH ORTIZ

PRESIDENT,
SANTA CRUZ REGIONAL
DEVELOPMENT CORPORATION

Mr. HAJIME TANAKA

TEAM LEADER,
STUDY TEAM OF
JAPAN INTERNATIONAL
COOPERATION AGENCY

Lic. ALFONSO R. KREIDLER GILLAX

SECRETARY
NATIONAL SECRETARIAT OF
PLANNING, MINISTRY OF
SUSTAINABLE DEVELOPMENT
AND ENVIRONMENT

Mr. KENJI KIYOMIZU

CHAIRMAN,
ADVISORY COMMITTEE OF
JAPAN INTERNATIONAL
COOPERATION AGENCY

Ing. EDGAR TALAVERA SOLIZ

SECRETARY
NATIONAL SECRETARIAT OF
PLANNING OF AGRICULTURE
AND CATTLE RAISING,
MINISTRY OF ECONOMIC
DEVELOPMENT

Lic. MARCELO MENDEZ FERRY

UNDERSECRETARY OF
PUBLIC INVESTMENT AND
EXTERNAL FINANCE,
MINISTRY OF FINANCE

The study team of Japan International Cooperation Agency (JICA) arrived and submitted thirty (30) copies of the Inception Report (March 1995) for the captioned project to SANTA CRUZ REGIONAL DEVELOPMENT CORPORATION (CORDECRUZ) on March 31, 1995, according to the Scope of Work agreed upon between CORDECRUZ and JICA on December 14, 1994.

The study team held a meeting with CORDECRUZ on the report that presents the study program for the captioned project, on April 3, 1995. The meeting was chaired by Ing. Manlio Alberto Roca Zamora of CORDECRUZ. The study team explained the report to the officials and discussed with the officials on the report. The list of participants is shown in Annex-1 .

The advisory team of JICA, headed by Mr. Kenji KIYOMIZU, visited Bolivia from April 10 to April 16. The advisory team and the study team held a meeting with CORDECRUZ and discussed with the officials on the report on April 12-13, 1995. CORDECRUZ expressed its satisfaction to the report. The list of participants is shown in Annex-2.

During the meeting some observations were made and discussed by the participants. The point discussed and agreed was as follows:

1 CORDECRUZ agreed to assign necessary numbers of counterparts to the study team for conducting the study smoothly, though number of full time counterparts are limited.

The points discussed and agreed to transfer to the JICA headquarters by the JICA Advisory Team were as follows:

1 CORDECRUZ requested JICA to hold a seminar related to the study in Santa Cruz at the timing of submission of the Draft Final Report.

2 CORDECRUZ requested JICA to conduct counterpart training in Japan in the course of the study.

Annex-1 List of the Participants

1 CORDECRUZ

| | |
|---|---|
| Ing. Manlio Alberto Roca Zamora | Coordinator of Counterparts/ Drainage |
| Ing. Mario Ribera Velez | Head, Team of Natural Resources/Hydrologist |
| Ing. Juan de Dios Algaranaz | Soil Expert |
| Ing. Hector Rivero | Agronomist/Planner |
| Lic. Dunia Mercado | Socioeconomist |
| Egr. Arq. Raul Velazquez Nieto | Planner |
| Lic. Patricia Mendez | Responsable Geographic Information System |

2 JICA Study Team

| | |
|---|---|
| Mr. Hajime TANAKA | Team Leader |
| Mr. Takashi FURUKAWA | Hydrologist/Hydraulic Engineer |
| Dr. Michiaki HOSONO | Agriculture / Land Use |
| Mr. Hiroshi MATSUO | Regional Development Planner |
| Dr. Kinichi OHNO | Socio-economist |
| Mr. Victor ARITOMI | Coordinator |

Annex-2 List of the Participants

1 CORDECRUZ

| | |
|---|---|
| Lic. Freddy Teodovich Ortiz | President |
| Lic. Ronald Parada Gil | General Manager |
| Ing. Julio Prado Salmon | Head of Development Divisions |
| Ing. Manlio Alberto Roca Zamora | Coordinator of Counterparts |

2 JICA Advisory Committee

| | |
|---|---|
| Mr. Kenji KIYOMIZU | Chairman of the JICA Advisory Committee |
| Mr. Kojiro MATUMOTO | JICA Officer |

3 JICA Study Team

| | |
|---|---|
| Mr. Hajime TANAKA | Team Leader |
| Mr. Takashi FURUKAWA | Hydrologist/Hydraulic Engineer |
| Dr. Michiaki HOSONO | Agriculture / Land Use |
| Mr. Hiroshi MATSUO | Regional Development Planner |
| Dr. Kinichi OHNO | Socio-economist |
| Mr. Kazuo FURUKATA | Topographic Survey Expert |

| | |
|---|---|
| Mr. Toshinori OSHITA | River Engineering/Flood Damage Survey Expert |
| Mr. Victor ARITOMI | Coordinator |

MINUTES OF MEETING
FOR
THE MASTER PLAN STUDY ON FLOOD CONTROL IN THE NORTHERN RURAL REGION OF SANTA CRUZ IN THE REPUBLIC OF BOLIVIA

BETWEEN

SANTA CRUZ REGIONAL DEVELOPMENT CORPORATION
AND
STUDY TEAM OF JAPAN INTERNATIONAL COOPERATION AGENCY

SANTA CRUZ, JUNE 9, 1995

LA PAZ, JUNE , 1995

Ing. FERNANDO AMELUNGE MARTINEZ

PRESIDENT
SANTA CRUZ REGIONAL
DEVELOPMENT CORPORATION

Mr. HAJIME TANAKA

TEAM LEADER,
STUDY TEAM OF
JAPAN INTERNATIONAL
COOPERATION AGENCY

Lic. ALFONSO E. KREIDLER GILLAUX

SECRETARY
NATIONAL SECRETARIAT OF
PLANNING,
MINISTRY OF SUSTAINABLE
DEVELOPMENT AND ENVIRONMENT

Lic. MARCELO MACHICAO B.

UNDERSECRETARY a.i. OF
PUBLIC INVESTMENT AND
EXTERNAL FINANCE,
MINISTRY OF FINANCE

Ing. EDGAR TALAVERA SOLIZ

SECRETARY
NATIONAL SECRETARIAT OF
PLANNING OF AGRICULTURE
AND CATTLE RAISING,
MINISTRY OF ECONOMIC DEVELOPMENT

The study team of Japan International Cooperation Agency (JICA) commenced the study since April 1995, based on the Inception Report (March 1995) that was submitted to Santa Cruz Regional Development Corporation (CORDECRUZ) on March 31, 1995 according to the Scope of Work agreed upon between CORDECRUZ and the JICA mission for the captioned study on December 14, 1994.

The study team and the counterparts held meetings on May 15, May 22, May 29 and May 31 on the initial findings. The study team members explained their findings by sector and the result of preliminary analysis to the counterparts during the meetings. Regarding the Central Government, on June 5 and 6, 1995 the team leader summarized the findings to the staff concerned. The initial findings from April through May 1995 have been compiled into Progress Report-1.

The Progress Report-1(June 1995) was submitted to CORDECRUZ on June 9, 1995. The study team held meetings with CORDECRUZ to discuss the report on June 9, 1995. The team leader explained an outline of the report to the participants to which CORDECRUZ expressed its satisfaction. The lists of participants are shown in Annex-1 and Annex-2, respectively.

During the meetings some observations were made and discussed by the participants. The points discussed and agreed upon were as follows:

1 CORDECRUZ agreed to provide the study team with the same office and to assign the same counterparts for the study in the next phase,

2 CORDECRUZ agreed to try to fulfill the agreed points in the Minutes of Meeting between CORDECRUZ and JICA mission for the study on December 14, 1994, and

3 The study team agreed to hold technical meetings with the counterpart personnel periodically to carry out technical transfer effectively.

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Annex-1 List of the Participants in the first meeting on June 9, 1995

1 CORDECRUZ

| | |
|---|---|
| Ing. Manlio Alberto Roca Zamora | Chief of Counterparts/Drainage |
| Ing. Mario Ribera Velez | Hydrologist Director |
| Ing. Juan de Dios Algaranaz | Soil Expert |
| Ing. Hector Rivero | Agronomist / Planner |
| Lic. Dunia Mercado | Socioeconomist |
| Egr. Arq. Raul Velazquez Nieto | Planner |
| Lic. Patricia Mendez | Geographic Information System |

2 JICA Study Team

| | |
|---|---|
| Mr. Hajime TANAKA | Team Leader |
| Mr. Takashi FURUKAWA | Hydrologist/Hydraulic Engineer |
| Mr. Toshinori OSHITA | River Engineering/Flood Damage Survey Expert |
| Mr. Kazuhiro TSUCHIDA | Drainage Engineer |
| Mr. Shigehiko HOMMA | Structure Design/Cost Estimation Expert |

## Annex-2 List of the Participants in the second meeting on June 9, 1995

1 CORDECRUZ

| | |
|---|---|
| Ing. Fernando Amelunge Martinez | President |
| Lic. Ronald Parada Gil | General Manager |
| Ing. Sergio Antelo Gutierrez | Planning Manager |
| Lic. Cecilia Limpias de Cruz | Chief Division of DPOPM |
| Ing. Manlio Alberto Roca Zamora | Chief of Counterparts |

2 JICA Study Team

| | |
|---|---|
| Mr. Hajime TANAKA | Team Leader |
| Mr. Takashi FURUKAWA | Hydrologist/Hydraulic Engineer |
| Mr. Toshinori OSHITA | River Engineering/Flood Damage Survey Expert |
| Mr. Kazuhiro TSUCHIDA | Drainage Engineer |
| Mr. Shigehiko HOMMA | Structure Design/Cost Estimation Expert |

MINUTES OF MEETINGS
FOR
THE MASTER PLAN STUDY ON FLOOD CONTROL IN THE NORTHERN RURAL REGION OF SANTA CRUZ IN THE REPUBLIC OF BOLIVIA

BETWEEN

SANTA CRUZ REGIONAL DEVELOPMENT CORPORATION
AND
STUDY TEAM OF THE JAPAN INTERNATIONAL COOPERATION AGENCY

SANTA CRUZ, SEPTEMBER 26, 1995
LA PAZ, SEPTEMBER , 1995

Ing. FERNANDO AMELUNGE MARTINEZ.

PRESIDENT
SANTA CRUZ REGIONAL
DEVELOPMENT CORPORATION

Mr. HAJIME TANAKA

TEAM LEADER,
JICA STUDY TEAM

Lic. RAMIRO ORTEGA LANDA

SECRETARY
NATIONAL SECRETARIAT OF
PLANNING,
MINISTRY OF SUSTAINABLE
DEVELOPMENT AND ENVIRONMENT

Mr. SHINYA SAITO

MEMBER OF
JICA ADVISORY
COMMITTEE FOR
THE STUDY

Ing. CARLOS AGREDA

UNDER SECRETARY OF
NATIONAL SECRETARIAT OF
PLANNING OF AGRICULTURE
AND CATTLE RAISING,
MINISTRY OF ECONOMIC
DEVELOPMENT

Lic. JUAN CARLOS AGUILAR

UNDER SECRETARY OF
PUBLIC INVESTMENT AND
EXTERNAL FINANCE,
MINISTRY OF FINANCE

From September 1995, the Study Team of the Japan International Cooperation Agency (JICA) commenced the Phase II field study based on the Inception Report (March 1995) that was prepared according to the Scope of Work agreed upon between Santa Cruz Regional Development Corporation (CORDECRUZ) and the JICA Preparatory Study Team for captioned study on December 14, 1994.

The Study Team presented the Interim Report (August 1995) to CORDECRUZ on September 4, 1995 and held meetings with the officials concerned at CORDECRUZ on September 5 and 6, 1995. During the meetings the Team Leader, Mr. Hajime TANAKA, suggested that in case of any comments on the report, the Study Team is ready to discuss on such comments with the counterparts during the technical meetings that will be held in the course of the study.

The Team Leader together with the chief counterpart of CORDECRUZ, Ing. Manlio Roca Zamora, presented the interim report to the Central Government officials concerned in La Paz on September 7 and 8, 1995.

The member of the JICA advisory committee for the study, Mr. Shinya SAITO, and the JICA task manager for the study, Mr. Katsumi OTANI, visited Bolivia from September 20 to September 26, 1995. The Study Team held a meeting on the interim report with the officials of CORDECRUZ on September 22, 1995.

During the meeting, the president of CORDECRUZ, Ing. Fernando Amelunge Martinez, expressed his satisfaction for the study and the Interim Report (August 1995).

Some observations were made and discussed by the participants in the meeting. The points discussed and agreed upon are as follows:

1. CORDECRUZ agreed to assign as many as possible full time counterparts to cooperate with the study team to fulfill the agreed points in the Minutes of Meetings between CORDECRUZ and the JICA Preparatory Study Team for the study on December 14, 1994, and

2. During the study the Study Team agreed to hold regular technical meetings with the counterpart personnel to carry out technical transfer effectively.

The list of participants is shown in Annex-1.

## Annex-1 List of Participants in the meetings

1. Bolivian side

(CORDECRUZ)

| | |
|---|---|
| Ing. Fernando Amelunge Martinez | President |
| Lic. Ronald Parada Gil | General Manager |
| Ing. Sergio Antelo Gutiérrez | Planning Manager |
| Lic. Cecilia Limpias de Cruz | Chief Division of DPOPM, |
| Ing. Manlio Alberto Roca Zamora | Chief of Counterparts/Drainage |
| Ing. Juan de Dios Algarañaz | Soil Expert, |
| Ing. Carlos Lambropulos Suárez | Geologist |
| Lic. Ricardo Rondo Quique Luna | Planning/ Economist |
| Lic. Gloria Peredo Gutiérrez | Economist |
| Ing. Francis Justiniano Lijerón | Civil engineer / Cost Estimate |

(Ministry of Sustainable Development and Environment)

| | |
|---|---|
| Lic. Alfonso E. Kreidler Gillaux | Ex-Secretary,<br>National Secretariat of Planning, |
| Lic. Ramiro Ortega Landa | Secretary,<br>National Secretariat of Planning, |
| Dr. Alejandro F. Mercado | Under Secretary,<br>Strategy of Development |

| | |
|---|---|
| Lic. Roberto Camargo | Consultant |

(National Secretariat of Planning of Agriculture and Cattle Raising, Ministry of Economic Development)

| | |
|---|---|
| Ing. Edgar Talavera Soliz | Secretary |
| Lic. Oscar E. Luna C. | Director, National Planning |
| Ing. Lucio Colque Gutiérrez | Director, National Irrigation and Soil |
| Sr. Javier Choquevilca Rocha | Unit of Agrometeorology and Early Alert |

(Public Investment and External Finance, Ministry of Finance) .

| | |
|---|---|
| Lic. Pilar Rollano Bravo | Consultant |
| Lic. Javier Martinez Villanueva | Chief of Multilateral Area of International Cooperation Office Public Investment and Foreign Financing Secretariat |

2. Japanese side

( JICA Study Team)

| | |
|---|---|
| Mr. Hajime TANAKA | Team Leader |
| Mr. Takashi FURUKAWA | Hydrologist/Hydraulic Engineer |
| Dr. Michiaki HOSONO | Agriculture/Land Use Expert |
| Mr. Hiroshi MATUO | Regional Development Planner |
| Mr. Kazuo FURUKATA | Topographic Survey Expert |

| | |
|---|---|
| Mr. Toshinori OSHITA | River Engineering/Flood Damage Survey Expert |
| Mr. Kazuhiro TSUCHIDA | Drainage Engineer |
| Dr. Hiroshi HASHIMOTO | Institution / Environment Expert |
| Mr. Victor ARITOMI | Coordinator |

(JICA Head Office)

| | |
|---|---|
| Mr. Shinya SAITO | Member of JICA Advisory Committee for the study |
| Mr. Katsumi OTANI | JICA Task Manager for the study Social Development Study Department, JICA |

MINUTES OF MEETINGS
FOR
THE MASTER PLAN STUDY ON FLOOD CONTROL IN THE NORTHERN RURAL REGION OF SANTA CRUZ IN THE REPUBLIC OF BOLIVIA

BETWEEN

SANTA CRUZ REGIONAL DEVELOPMENT CORPORATION
AND
STUDY TEAM OF THE JAPAN INTERNATIONAL COOPERATION AGENCY

SANTA CRUZ, DECEMBER 11, 1995

LA PAZ, DECEMBER , 1995

Lic. RONALD PARADA GIL.

PRESIDENT a.i.
SANTA CRUZ REGIONAL
DEVELOPMENT CORPORATION

Mr. HAJIME TANAKA

TEAM LEADER,
JICA STUDY TEAM

Lic. RAMIRO ORTEGA LANDA

SECRETARY
NATIONAL SECRETARIAT OF
PLANNING,
MINISTRY OF SUSTAINABLE
DEVELOPMENT AND
ENVIRONMENT

Ing. EDGAR TALAVERA SOLIZ

UNDER SECRETARY OF
NATIONAL SECRETARIAT OF
PLANNING OF AGRICULTURE
AND CATTLE RAISING,
MINISTRY OF ECONOMIC
DEVELOPMENT

Lic. JUAN CARLOS AGUILAR

UNDER SECRETARY OF
PUBLIC INVESTMENT AND
EXTERNAL FINANCE,
MINISTRY OF FINANCE

The Study Team of the Japan International Cooperation Agency (JICA) started the phase-2 field study from the beginning of September 1995 and issued the Progress Report-2 in the beginning of December 1995. During the period the Study Team has held regular technical meetings with the officials concerned of Santa Cruz Regional Development Corporation (CORDECRUZ) on the results of the study.

The Team Leader, Hajime Tanaka, together with the chief counterpart of CORDECRUZ, Ing. Manlio Roca Zamora, presented the outline of the Progress Report-2 based on the copy of Summary Report to the Central Government officials concerned in La Paz on December 6, 1995.

The Study Team held a meeting with the officials of CORDECRUZ on the Progress Report-2 at CORDECRUZ on December 11, 1995. The president of CORDECRUZ, Ing. Fernando Amelunge Martinez, chaired the meeting. The Team Leader presented the outline of the report to the participants and explained that all basic data and methodologies used for the Study will be provided or explained more in detail in the next report (Draft Final Report) and that any comments raised on the report will be considered and incorporated into the next report.

After exchanging views among the participants on some observations such as priority sequence of proposed measures, required implementation organizations and required preparation works for non-structural measures, CORDECRUZ expressed its satisfaction to both the study and the Progress Report-2.

During the discussion, CORDECRUZ has stressed the following points and the Study Team has agreed to transfer them to the JICA headquarters. They are summarized as follows:

1. CORDECRUZ requested the Study Team to hold technical meetings on the Study instead of a general technical seminar that was stated in the Inception Report (March 1995) to be held just after the explanation of the Draft Final Report in March 1996, because it could be more

effective for technical transfer purposes to hold technical meetings on the results of the Study between the JICA Team and the officials concerned

2 The Study will be followed up by the same counterparts under the authority of the new departmental organization after the reformation from January 1996 in order to avoid any inconvenience for both sides, though CORDECRUZ is to be dissolved by the end of 1995 and to be reformed as a part of the departmental organization from January 1, 1996, in accordance with the Law of Decentralization.

The list of participants is shown in Annex-1.

## Annex-1 List of the Participants in the meetings

### 1. Bolivian Side

**(CORDECRUZ)**

| | |
|---|---|
| Ing. Fernando Amelunge Martinez | President |
| Lic. Ronald Parada Gil | General Manager |
| Ing. Sergio Antelo Gutiérrez | Planning Manager |
| Lic. Adaly de Rojas | Chief Division of DPOPM. a.i. |
| Ing. Manlio Alberto Roca Zamora | Chief of Counterparts/Drainage |
| Ing. Juan de Dios Algarañaz | Soil Expert, |
| Ing. Carlos Lambropulos Suarez | Geologist |
| Lic. Ricardo Rondón Quique Luna | Planning/ Economist |
| Lic. Gloria Peredo Gutiérrez | Economist |
| Ing. Francis Justiniano Lijerón | Civil engineer / Cost Estimate |
| Ing. Rodolfo Candia | Planning Engineer |

(Ministry of Sustainable Development and Environment)

| | |
|---|---|
| Lic. Ramiro Ortega Landa | Secretary, National Secretariat of Planning, |

(National Secretariat of Planning of Agriculture and Cattle Raising, Ministry of Economic Development)

| | |
|---|---|
| Lic. Oscar E. Luna C. | Director, National Planning |
| Ing. Lucio Colque Gutierrez | Director, National Irrigation and Soil |

(Public Investment and External Finance, Ministry of Finance)

| | |
|---|---|
| Lic. Pilar Rollano Bravo | Consultant |
| Lic. Roberto Ticona | Public Investment Consultant |

2. Japanese Side

( JICA Study Team)

| | |
|---|---|
| Mr. Hajime TANAKA | Team Leader |
| Dr. Kinichi OHNO | Socio-economist |
| Mr. Toshinori OSHITA | River Engineering/Flood Damage Survey Expert |
| Mr. Kazuhiro TSUCHIDA | Drainage Engineer |

(JICA, Santa Cruz Office)

Mr. Norioki HONDA DIRECTOR,

Mr. Fusayasu KAMIYA General Coordinator,

**MINUTES OF MEETINGS**
**ON**
**THE DRAFT FINAL REPORT**
**FOR**
**THE MASTER PLAN STUDY ON FLOOD CONTROL IN THE NORTHERN RURAL REGION OF SANTA CRUZ IN THE REPUBLIC OF BOLIVIA**

SANTA CRUZ, MARCH 19, 1996
LA PAZ, MARCH , 1996

Mr. JULIO LEIGUE HURTADO

PREFECTO
DEPARTMENT OF
SANTA CRUZ

Mr. HAJIME TANAKA

TEAM LEADER
JICA STUDY TEAM

Mr. RAMIRO ORTEGA LANDA

SECRETARY FOR
NATIONAL SECRETARIAT OF
PLANNING,
MINISTRY OF SUSTAINABLE
DEVELOPMENT AND ENVIRONMENT

Mr. SHINYA SAITO

MEMBER OF
JICA ADVISORY
COMMITTEE FOR
THE STUDY

Mr. EDGAR TALAVERA SOLIZ

SECRETARY FOR
NATIONAL SECRETARIAT OF
PLANNING OF AGRICULTURE
AND CATTLE RAISING,
MINISTRY OF ECONOMIC
DEVELOPMENT

Mr. JUAN CARLOS AGUILAR

UNDER SECRETARY FOR
PUBLIC INVESTMENT AND
EXTERNAL FINANCE,
MINISTRY OF FINANCE

The Master Plan Study on Flood Control in the Northern Rural Region of Santa Cruz, Republic of Bolivia, has been conducted by the JICA Study Team since end of March 1995, and the Draft Final Report for the Study was issued in March 1996.

The JICA Study Team visited Bolivia from March 11 to 22, 1996. The JICA Study Team together with the counterpart for the JICA Study, Mr. Manlio Roca Zamora, presented the Draft Final Report to the Ministry of Sustainable Development and Environment, and explained the outline of the Draft to Mr. Alejandro Mercado, Under Secretary for Development Strategies, Ministry of Sustainable Development and Environment, in La Paz on March 12.

The JICA Advisory Committee member for the Study, Mr. Shinya SAITO, and the JICA task manager for the Study, Mr. Katumi OTANI, visited Bolivia from March 13 to 19. The Study Team, the JICA Advisory Committee member and the JICA task manager, together with the counterpart, presented the Draft Final Report, both to the Ministry of Economic Development and to the Ministry of Finance, and explained the outline of the Draft to the officials concerned in La Paz on March 13.

The Study Team presented the Draft Final Report to the Prefectura of Santa Cruz and held meetings on the Draft Final Report with the officials concerned on March 15 and 18. During the first meeting, the Draft was explained to the officials concerned. During the March 18 meeting, the Study Team explained the Draft to the counterpart personnel.

During the meetings, some observations were made and discussed. The points discussed and agreed upon are as follows:

1. The Draft Final Report and the priority projects it includes were agreed in principle without special comments.

2. It was agreed that the Secretariat for Sustainable Development, Prefectura of Santa Cruz shall collect comments, if any, on the Draft and forward them to the Study Team by April 17 - or before - for the Study Team to incorporate them into the Final Report.

3. The Bolivian side agreed to publisize the Final Report

The list of participants is shown in Annex - 1.

## Annex-1 List of Participants in the meetings

### 1. Bolivian Side

**(Prefectura of Santa Cruz)**

| | |
|---|---|
| Gustavo Justiniano Aponte | General Secretary (represented by his advisor, Dr. Federico Joffré) |
| Fernando Amelunge Martinez | Secretary for Economic Development * |
| Sergio Antelo Gutierrez | Secretary for Sustainable Development and Environment |
| Julio Maldonado | Director for Planning |
| Francisco Kempff | Director, Natural Resources |
| Ulrich Reye | Planning Advisor |
| Rodolfo Candia | Chief Preinvestment Unit |
| Mario Ribera | Responsible for Environmental Quality |
| Guillermo Serrate | Chief of Master Plan of Agricultural Products |
| Marcelo Ruiz | Soil Expert<br>Land Use Plan |
| Manlio Alberto Roca Zamora | Counterpart for the JICA Study Team |

*(former President of the extinct CORDECRUZ)

**(Ministry of Sustainable Development and Environment)**

| | |
|---|---|
| Alejandro F. Mercado | Under Secretary for Development Strategies |

**(National Secretariat for Agriculture and Cattle Raising, Ministry of Economic Development)**

| | |
|---|---|
| Edgar Talavera Soliz | Secretary |

**(Public Investment and External Finance, Ministry of Finance)**

| | |
|---|---|
| Roberto Ticona | Public Investment Consultant |
| Ozman F. Altamirano V. | Agriculture and Cattle Raising Consultant |

2. **Japanese Side**

**( JICA Study Team)**

| | |
|---|---|
| Hajime TANAKA | Team Leader |
| Michiaki HOSONO | Agriculture/Land Use Engineer |
| Takashi FURUKAWA | Hydrologist/Hydraulic Engineer |

**(Advisory Committee for the Study)**

| | |
|---|---|
| Shinya SAITO | Flood Control |

**(JICA Head Office)**

| | |
|---|---|
| Katumi OTANI | Task Manager for the Study |

**(JICA, Santa Cruz Office)**

| | |
|---|---|
| Norioki HONDA | Director, |
| Fusayasu KAMIYA | General Coordinator, |

# APENDICE C

# TERMINOS DE REFERENCIA

# ESTUDIO DE FACTIBILIDAD

# TERMINOS DE REFERENCIA (BORRADOR)
# DEL
# ESTUDIO DE FACTIBILIDAD
# PARA
# EL CONTROL DE INUNDACIONES EN LA REGION RURAL NORTE DEL DEPARTAMENTO DE SANTA CRUZ EN LA REPUBLICA DE BOLIVIA

Antecedentes

El Departamento de Santa Cruz ocupa un lugar importante en lo que respecta al aspecto socio-económico del país. En 1992, el Departamento contaba con el 30% del PNB, lo cual equivalía a la porción más importante de los nueve departamentos. Así también, ese mismo año el Departamento mostraba el mayor índice de incremento poblacional; su población ascendía a 1.364.389 habitantes; lo cual representaba un 21% del total de la población boliviana.

La zona rural norte de la ciudad de Santa Cruz comprende el área de la zona integrada de desarrollo, donde el 80% de la población se encuentra asentada y donde se ha desarrollado la mayor parte del área agrícola e industrial del Departamento. Gran parte de las agroindustrias se encuentran localizadas dentro del área de estudio.
Sin embargo, esta zona ha estado sufriendo constantes inundaciones de los ríos principales y sus tributarios. Entre los ríos más importantes podemos mencionar a el Río Grande, Río Pirai y Río Yapacaní. Los daños más severos se registraron durante 1983 y 1992. Las inundaciones de 1983, causadas por el Río Pirai, ocasionaron serios daños a la ciudad de Santa Cruz, como así también a la zona aledaña a este río. Mientras que en 1992, las inundaciones causaron los peores daños registrados en la zona rural norte del Departamento.

Posterior a las inundaciones de 1983 y con el apoyo de la actual Unión Europea, el Gobierno fundó SEARPI y condujo el "Plan Maestro para el Manejo y

Encauzamiento del Río Pirai" (de 1988 a 1990). Es así que SEARPI ha llevado a cabo algunas de las medidas de control de inundaciones a lo largo del Río Pirai.

En respuesta al Gobierno Boliviano, el Gobierno Japonés ha decidido conducir el "Plan Maestro sobre el Control de Inundaciones en la Región Rural Norte de Santa Cruz" cuya área cubre cerca de 7.000 km2 de la región norte. Este Estudio del Plan Maestro fué iniciado por JICA en el mes de Marzo de 1995.

De acuerdo al Estudio del Plan Maestro, la zona rural norte es extremadamente vulnerable a inundaciones y problemas de drenaje debido a condiciones naturales desfavorables tales como topografía plana y condiciones metereo-hidrológicas difíciles. Las áreas amenazadas por inundaciones anuales y por las inundaciones de 1992 se estiman en 2.444 $km^2$ y 4.857 $km^2$ respectivamente.

El área amenazada por las inundaciones cubre una gran parte de las zonas de agricultura intensiva en la zona rural norte que incluye las principales colonias como: Okinawa, Aroma, Puesto Fernández, San Juan y Antofagasta. Se han estudiado medidas para lograr una óptima mitigación de las inundaciones y mejoramiento de los problemas de drenaje incluyendo las áreas prioritarias propuestas para el E/F.

El área para el E/F incluye las áreas de San Juan-Antofagasta, cubriendo aproximadamente un total de 1.600 $km^2$; la zona de Chané-Pailón, que se encuentra situada al noroeste de Santa Cruz e incluye colonias importantes como: Okinawa, Aroma y Puesto Fernández. El área de San Juan-Antofagasta se encuentra en el área noroeste. Las áreas prioritarias son las que más han empleado la agricultura intensiva en el Departamento, por consiguiente, las inundaciones y los problemas de drenaje representan serias limitaciones para estas áreas.

De acuerdo a la evaluación económica, las medidas propuestas incluyen importantes ventajas económicas, aunque los trabajos de mejoramiento para el Río Chané no son factibles y para el río San Juan se consideran marginales. Antes de la

implementación de dichas medidas, se deberá llevar a cabo el E/F para la adopción de medidas básicas y urgentes.

Entre las propuestas, se ponen en consideración las siguientes medidas estructurales urgentes para la mitigación de inundaciones y mejoramiento de drenaje en el E/F, como sigue:

1. Area Chané - Pailón

- Río Chané
- Río Pailón
- Drenaje Okinawa

2. Area San Juan - Antofagasta

- Antofagasta

Se proponen medidas a ser estudiadas en áreas piloto tales como drenaje secundario y estructuras relacionadas, además de las medidas no-estructurales.

Una vez ejecutadas las medidas urgentes propuestas, se pondrán a salvo de problemas severos de inundación gran parte de las tierras agrícolas inestables dentro del área amenazada por las inunaciones, por lo tanto, será necesario adoptar las medidas más adecuadas. Para acelerar la diversificación agrícola, la cual podría convertirse en una contramedida efectiva para el desarrollo sostenible del área, se propone el estudio de un plan óptimo y de desarrollo agrícola en el área piloto seleccionada en Okinawa y San Juan.

2. Objetivos del Estudio

Los objetivos del Estudio son:

(1) Conducir un Estudio de Factibilidad sobre medidas para la mitigación de inundaciones y mejoramiento de drenaje para el área de estudio, incluyendo un estudio de desarrollo agrícola para respaldar el desarrollo regional sostenible.

(2) Lograr un desarrollo tecnológico entrenando al personal de contraparte durante la ejecución del trabajo.

3. Area de Estudio

El Area de Estudio (aproximadamente 1.600 km²) incluye las siguientes áreas:

1. El área Chané-Pailón en el área rural noreste de Santa Cruz cubre aproximadamente 1.000 km².

2. El área San Juan-Antofagasta en la zona rural noroeste de Santa Cruz, cubre aproximadamente 600 km².

Se muestra su ubicación en la *Fig. 1.*

4. Alcance del Estudio

4.1 Recopilación de Datos Suplementarios, Investigación de Campo y Levantamiento de Datos de Campo como se describe a continuación:

(1) Para recopilar datos e información suplementaria

- Datos Hidrológicos
- Inundación y daños causados por las inundaciones
- Datos socio-económicos
- Agricultura y agro-economía
- Construcción y estimación de costos

- Instituciones relacionadas para la implementación, Operación y Manejo (OM).
- Aspectos del Medio Ambiente
- Otros datos e información relacionados.

(2) Investigación Suplementaria de Campo y Levantamiento de Datos de Campo

- Levantamiento de datos topográficos y mapeado de fotografías aéreas para la preparación de óptimos mapas base del área de estudio.

- Levantamiento de secciones transversales y longitudinales de los ríos y canales de drenaje.

- Investigación geológica para excavaciones y construcciones importantes como carreteras y puentes.

(3) Estudio Suplementario de la Agricultura y Uso de Suelos en Areas Amenazadas.

- Encuestas en propiedades agrícolas
- Encuestas sobre economía agrícola
- Estudio de suelo

4.2 Análisis Suplementario de Datos

- Datos Hidrológicos
- Daños causados por las inundaciones
- Area Amenazada por Inundaciones
- Agricultura y Uso de Suelos
- Datos Socio-económicos

4.3 Plan de Desarrollo Agrícola

(1) Plan de Agricultura

- Posible Calendario para Cultivos
- Manejo de Cultivos
- Tecnología para Cultivos
- Sistema de Cultivos

(2) Plan Para Infraestructura Agrícola

- Infraestructura post cultivo
- Conservación de plantaciones.

(3) Plan de Irrigación y Drenaje

- Infraestructura para irrigación y drenaje.

4.4 Plan Urgente para la Mitigación de Inundaciones y Mejoramiento de Drenaje

(1) Diseño Preliminar

- Medidas estructurales para la mitigación de inundaciones
- Medidas estructurales para el mejoramiento de drenaje
- Sistema de drenaje secundario en áreas piloto.

(2) Calendario de Construcción y Estimación de Costos

(3) Ejecución de una Evaluación de Impacto Ambiental

(4) Evaluación del Proyecto

- Económico
- Social

- Técnico
- Medio Ambiental

(5) Desarrollo Institucional

- Estudio para la implementación organizacional.
- Estudio de una organización para la Operación y Manejo (OM).

(6) Preparación de los Programas de Implementación

4.4 Preparación de Estrategia para el Manejo de las Areas Amenazadas por Inundaciones

- Diseño preliminar de un sistema de alerta temprana en caso de inundación
- Diseño preliminar de un sistema de evacuación en caso de inundación

5. Calendario del Estudio

La duración del Estudio será de 12 meses.

6. Calendario de Reportes

Durante el transcurso del Estudio, se presentarán los siguientes reportes al Gobierno de Bolivia, como sigue:

(1) Reporte Inicial

Treinta (30) copias del reporte serán entregadas al principio del estudio en Bolivia.

(2) Reporte Intermedio

Treinta (30) copias del reporte serán entregadas dentro de los seis (6) meses una vez iniciado el Estudio.

(3) Borrador del Informe Final

Treinta (30) copias del reporte serán entregadas dentro de los diez (10) meses una vez iniciado el Estudio.

El Gobierno de Bolivia podrá exponer sus comentarios al JICA en el lapso de un (1) mes, una vez recibido el Borrador del Informe Final.

(4) Informe Final

Cincuenta (50) copias serán entregadas un (1) mes después de recibidos los comentarios del Gobierno de Bolivia.

7. Personal Especializado necesario.

-1 Jefe del Equipo
-2 Hidrólogo
-3 Ingeniero de Drenaje
-4 Ingeniero de Ríos
-5 Ingeniero Civil
-6 Ingeniero Agrónomo/Uso de Suelos
-7 Experto en levantamiento de datos en caso de daños por inundación
-8 Topógrafo
-9 Experto en Levantamiento de Datos
-10 Especialista en medio ambiente
-11 Economista
-12 Especilista en Planeamiento de Construcción y Estimación de Costos
-13 Geólogo
-14 Planificador Agrícola

-15 Economista Agrícola

-16 Experto en Extensión Agrícola

-17 Experto en Infraestructura Agrícola

8. Responsabilidades del Gobierno de la República de Bolivia

(1) Garantizar el bienestar del equipo de estudio.

(2) Permitir a los miembros del equipo de estudio ingresar, salir y permanecer en territorio boliviano durante la ejecución de sus labores sin necesidad de registro migratorio o cobros consulares.

(3) Liberar al equipo de estudio de impuestos, cobros o cualquier otro pago por equipo, maquinaria u otro material ingresado o sacado de Bolivia que se utilice para la conducción del estudio.

(4) Liberar al equipo de estudio de impuestos o cargos de cualquier tipo sobre o en conexión con cualquier utilidad u honorario pagado por sus servicios en lo que respecta a la implementación de dicho estudio.

(5) Proporcionar los medios necesarios al equipo de estudio para el manejo y la utilización de los fondos ingresados a Bolivia desde Japón para la implementación del estudio.

(6) Colaborar en la tramitación de los permisos necesarios para el ingreso a propiedades privadas o áreas restringidas que estén dentro de la conducción del estudio.

(7) Garantizar el permiso para que el estudio pueda disponer de todos los datos, documentos y materiales disponibles relacionados con el estudio durante su ejecución en el Japón.

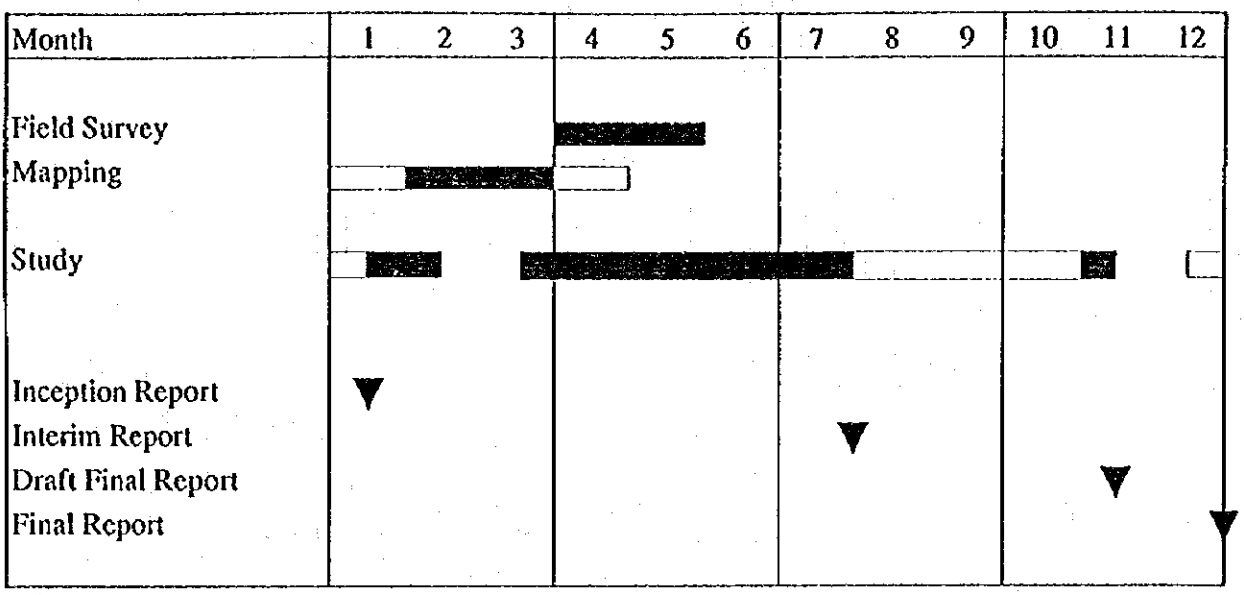
(8) Proporcionar los servicios médicos necesarios. Los gastos correrán por cuenta de los miembros del equipo de estudio.

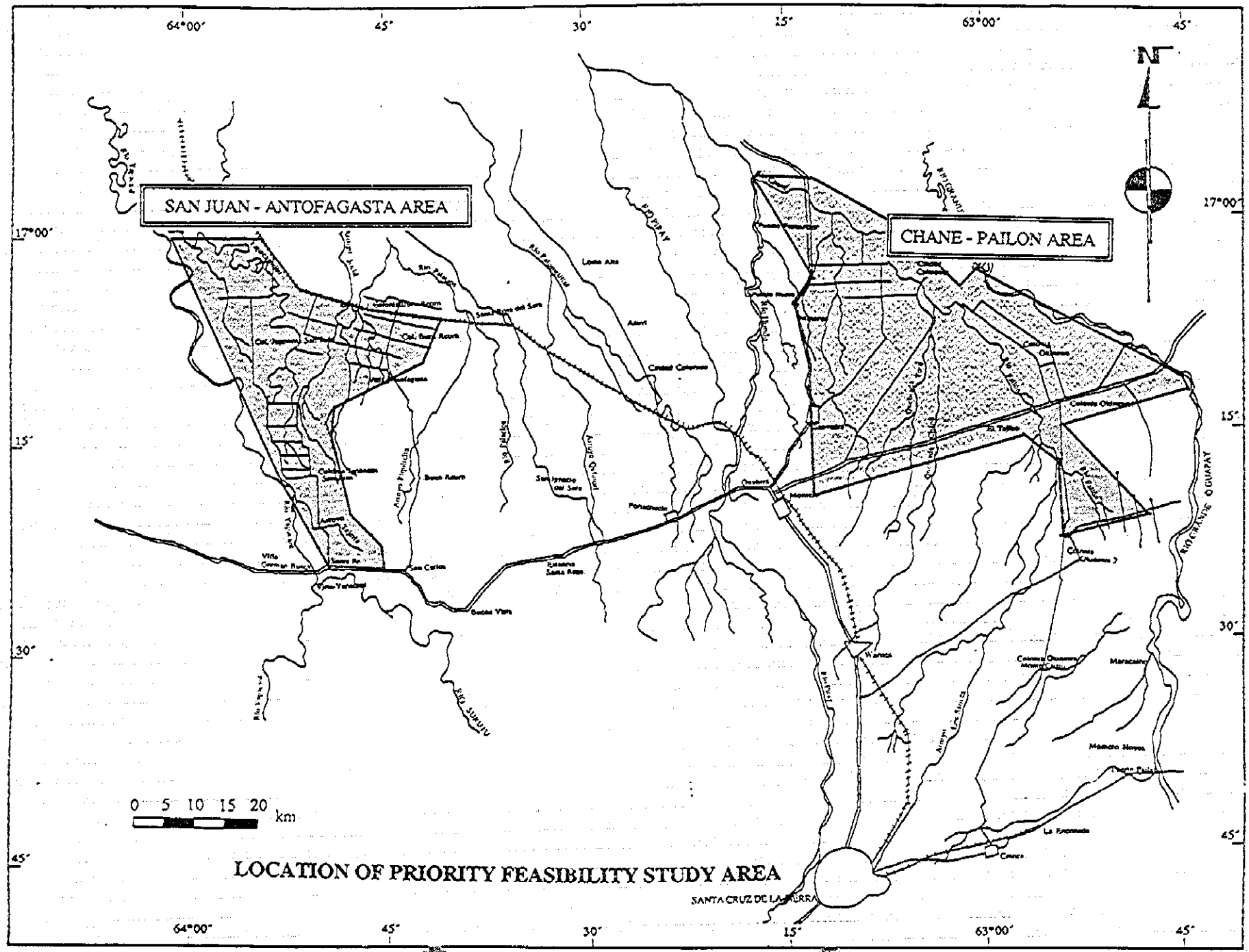
El Gobierno de Bolivia podrá presentar reclamos, en caso de existir estos, durante el transcurso del estudio, que estén relacionados con el desempeño de las funciones de cualquiera de los miembros del equipo. Sin embargo, no deberá procederse de la misma manera, si los reclamos surjen al márgen de sus tareas relativas al estudio como resultado de una evidente negligencia o conducta malintensionada.

9. Entes Ejecutores

El Ministerio de Desarrollo Sostenible y Medio Ambiente y el Gobierno del Departamento de Santa Cruz serán los entes ejecutores y actuarán como contraparte del Estudio, así también como cuerpo consultivo con otras organizaciones gubernamentales y no gubernamentales necesarias para una implementación apropiada y sin contratiempos del estudio.

TABLE 1 TENTATIVE TIME SCHEDULE






LOCATION OF PRIORITY FEASIBILITY STUDY AREA

JICA