# PROJECT SUMMARY (Other)

Compiled Mar.1990
Revised Mar.1996

AFR ZWE/S 601/80

## I. OUTLINE OF STUDY

1.COUNTRY: Zimbabwe

2.NAME OF STUDY: Electrification of National Railways

3.SECTOR: Transportation/Railway

4.REFERENCE NO.:

5.TYPE OF STUDY: Other

6.COUNTERPART AGENCY: Ministry of Transport and Energy

7.OBJECTIVES OF STUDY: Examination of the possibility of Japan's cooperation with the proposed railway electrification project

8.DATE OF S/W: /

9.CONSULTANT(S):

10.STUDY TEAM
No.of Members 7
Period Nov.1980-Dec.1980(1 months)

| Total M/M | Japan | Field |
|---|---|---|

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:

12.EXPENDITURE
Total 9,382 (¥'000)
Contracted

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Section between Salisbury and Dapka

2.PROJECT COST

| (US$1,000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | | | |
| 2) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

In response to the application for OECF finance on the electrification of the railway, the study examined the possibility of cooperation and evaluated two alternatives.

Alternative 1: 20 new railcars and replacement of 14 diesel locomotives with electric locomotives
Alternative 2: 20 new railcars

4.CONDITIONS AND DEVELOPMENT IMPACTS

(Development Impacts)
1) Reduction of diesel oil imports
2) Reduction of fuel costs by replacing with cheaper electricity
3) Reduction of maintenance costs on locomotives (including the reduction of manpower requirements)
4) Decrease of accidents and the speed-up of the railway operation
5) Efficient use of energy

5.TECHNICAL TRANSFER

## III. PRESENT STATUS OF STUDY RESULTS

1.PRESENT STATUS
- [x] In Progress or In Use
- [ ] Delayed
- [ ] Discontinued

(Description)
(FY1993 Overseas Survey)
Proposed project was implemented and coordinated with a electrification project from Harare to Gvera. Because the Structural Adjustment Program by the World Bank recognized electrification project for major reason of deficit operation of National Railways, the project was cancelled. At present, National Railways puts priority on CTS system, telecommunication system and purchasing 50 new coaches, which are requested for economic cooperation.

(FY1995 Domestic Survey)
Additional informations are not available since Japan National Railway, which were in charge of this project, had been divided to several private companies. (learnt from JR Eastern Japan)

2.MAJOR REASONS FOR PRESENT STATUS

3.PRINCIPAL SOURCE OF INFORMATION
③

和名 国鉄電化計画

(M/P,Basic Study,Other)

# PROJECT SUMMARY (M/P)

Compiled Mar.1986
Revised Mar.1996

AFR ZWE/S 101/83

## I. OUTLINE OF STUDY

**1.COUNTRY** Zimbabwe

**2.NAME OF STUDY**
Rural Water Supply Programme in Communal Lands in Parts of Masvingo and Midlands Provinces

**3.SECTOR**
Public Utilities/Water Supply

**4.REFERENCE NO.**

**5.TYPE OF STUDY** M/P

**6.COUNTERPART AGENCY**
Ministry of Water Resources and Development

**7.OBJECTIVES OF STUDY**
Reservation of sanitary clear water resources by the development of underground water

**8.DATE OF S/W** 1982/10

**9.CONSULTANT(S)**
Sanyu Consultants Inc.

**10.STUDY TEAM**

No.of Members 7
Period Dec.1982-Aug.1983(9 months)

| Total M/M | Japan | Field |
|---|---|---|
| 37.20 | 13.40 | 23.80 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
Survey for Water Holding Layers by Electric Exploration

**12.EXPENDITURE**

| | |
|---|---|
| Total | 118,296 (¥'000) |
| Contracted | 98,508 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
Southeastern part of midlands Province and Western part of Masvingo Province

**2.PROJECT COST**

| (US$1,000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 53,079 | 33,218 | 19,861 |
| 2) | | | |

**3.CONTENTS OF MAJOR PROJECT(S)**
Annual construction of 295 deep wells for 10 years, i.e. 2950 in total, in expectation of supporting 250 people per well.

| Village Common Area | Number of wells (in 1993) |
|---|---|
| Mberengwa | 775 |
| Chibi | 702 |
| Shurugwi | 235 |
| Chilimazi & others | 878 |
| total | 2,590 |

**4.CONDITIONS AND DEVELOPMENT IMPACTS**
A project to supply sanitary clean water to small groups of people scattered in the grassy sabannah. The report emphasized the following;
(1) 10 years later, when the project is completed, the cattle will come up in number to 85% of people. Since no further increase in water from wells is expected, control of the number will be required.
(2) With the increase in wells and population, it is necessary to establish rules to use water from wells.

**5.TECHNICAL TRANSFER**
Supply of equipment and instruction : Supply of 2 units of boring rigs and technical instruction at site to the local engineers.

## III. PRESENT STATUS OF STUDY RESULTS

**1.PRESENT STATUS**
- [x] In Progress or In Use
- [ ] Delayed
- [ ] Discontinued

(Description)
Projects in Midlands Province were financed in 1983-84 with the Japanese grant aid of 800 million yen (Boring of 100 wells, two thirds of the 1st year projects). Those in Masvingo Province were financed by the EEC grant.

(FY1994 Domestic Survey)
Basic Design was implemented in 1994. The project is planned to start in 1995.

(FY1995 Domestic Survey)
In 1995, the project is being implemented.

**2.MAJOR REASONS FOR PRESENT STATUS**
The area was suffering from severe shortage of water. Because of the lack of fund for the necessary equipment in the Government of Zimbabwe, the boring rigs, related equipment and materials were supplied by grant aid along with the instruction to use them at site.

**3.PRINCIPAL SOURCE OF INFORMATION**
①

和名 村落給水計画

{M/P,Basic Study,Other}

# PROJECT SUMMARY (F/S)

Compiled Mar.1986
Revised Mar.1996

AFR ZWE/S 301/83

## I. OUTLINE OF STUDY

1.COUNTRY: Zimbabwe

2.NAME OF STUDY:
Installation Project of INTELSAT Standard A Earth Station

3.SECTOR:
Communications & B/Telecommunication

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY:
Ministry of Information, Post and Telecommunication

7.OBJECTIVES OF STUDY:
To provide the construction plan of the ground station of Satellite communications.

8.DATE OF S/W: 1982/10

9.CONSULTANT(S):
Kokusai Denshin Denwa Co, Ltd.

10.STUDY TEAM

No.of Members 8

Period Nov.1982-Mar.1983(4 months)

| Total M/M | Japan | Field |
|---|---|---|
| 16.00 | 10.50 | 5.50 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:
None

12.EXPENDITURE

| | |
|---|---|
| Total | 53,571 (¥'000) |
| Contracted | 41,037 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA:
Mazowe District and Harare

2.PROJECT COST

(US$1,000)
Z$1=US$1.32=250yen

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 15,586 | 2,323 | 13,263 |
| 2) | 16,957 | 1,109 | 15,848 |
| 3) | 6,811 | | 6,811 |

3.CONTENTS OF MAJOR PROJECT(S)

1.INTELSAT Standard A Earth Station
1)Phase 1 Project: Cost 1) above
a.Atlantic Ocean Region(AOR) Network: Configuraiton of high power amplifier, low noise amplifier and ground communication equipment subsystems; antenna subsystem(9 antennas, dia.30 - 32m); power supply subsystem; MUX subsystem
b.Installation at Harare Center Exchange Building: terrestrial microwave system;MUX equipment; TV control & monitor equipment
c.Related buildings and facilities
2)Phase 2 Project: Cost 2) above
a.Indian Ocean Region(IOR) Network:Basically the same set of subsystems as AOR Station, but 6 antennas
b.Expansion of related buildings and facilities
2.Toll Exchange Facility: Cost 3) above
1)Harare: Trunk & Junction Tandem Exchange(6,300 trunks and 20 operators' positions)
2)Bulawayo: Trunk Exchange(2,100 trunks and 2 operators' positions)

Imp. Period: 1983.7-1984.12 1987.7-1988.12

4.FEASIBILITY AND ITS ASSUMPTIONS

Feasibility: Yes

| | | | |
|---|---|---|---|
| EIRR1) | | FIRR1) | 21.62 |
| EIRR2) | | FIRR2) | 20.60 |
| EIRR3) | | FIRR3) | 22.53 |

Conditions and Development Impacts:
[Conditions]
1)Start of operation: early 1985 for AOR Network; early 1989 for IOR Network; early 1986 for Toll Exchange
2)Project life of 15 years
3)International telephone traffic forecast (busy hour calls):

| | AOR | IOR | Total |
|---|---|---|---|
| 1986/87 | 102.54erl | 20.06 | 122.60(1.4 million minutes/year) |
| 2000/01 | 313.54erl | 61.18 | 374.72(4.2 million minutes/year) |

4)FIRR 1) above is for AOR Network only, FIRR 2) for AOR and IOR Networks, and FIRR 3) for the entire project including the Toll Exchange.

[Development impacts]
1)Elimination of economic, political and social disadvantages of the dependency on the foreign telecommunication networks
2)Reduction of waiting time and telephone charges, convenience of direct dialling, increase of telecommunication, etc.

5.TECHNICAL TRANSFER
1) Acceptance of trainees (JICA training program)
2) OJT

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- [■] Completed or in Progress
  - ○ Completed
  - ● Partially Completed
  - ○ Implementing
  - ○ Processing
- [ ] Promoting
- [ ] Delayed or Suspended
- [ ] Discontinued or Cancelled

(Description)
Jul.1993 D/D completed
Apr.1984 OECF L/A signed (2,516 million yen)
Implemented : AOR Earth Station at Mazowe
Mar. - Apr.1985 A Japanese O/M expert sent to Zimbabwe
Sep.1986 - ep.1987 A JICA expert sent to Zimbabwe
Oct.1989 OECF L/A signed (6,021 million yen)
Part of the loan is for the Toll Exchange at Harare.
Aug.1993 OECF L/A signed (9,523 million yen)
Telecommunication Development in Matabeleland.

Contents of OECF Loan
(1)Contents
1.The construction of INTELSAT standerd A earth station for the satellite on the Atlantic Ocean whose capacity is 300 channels and television circuits.
2.Employment of consultants for the purpose of the assistance and recommendation on the data evaluation of the examinations at the factory and sites.
(2)Loan target
the foreign currency for above project.

(FY1993 Overseas Survey)
(1) INTELSAT Standard A Earth Station for AOR, Harare Central Exchange Station and other phase-1 projects have been completely implemented and operated.
(2) 80% of Harare Trunk & Junction Tanden Exchange which is proposed phase 3 projects, has been implemented.
(3) Post & Telecommunication Corporation is selecting a consultants for Bulawayo Trunk & Junction Tanden Exchange which is founded by OECF. OECF loan for other proposed projects relate to Bulawayo Trunk scheduled to be sign within 1994.
(4) INTELSAT Standard A Earth Station for IOR and related phase-3 projects has been agreed to finance by Japan Export Import Bank.

(FY1994 Domestic Survey)(FY1995 Domestic Survey)
No additional information.

(FY1995 Overseas Survey)
Jul.1993 - Oct.1994 The construction of Phase II is undertaken (financed by the Japan Export-Import Bank, 1,122 million yen)

2.MAJOR REASONS FOR PRESENT STATUS
1) Effectiveness; 2) Good financial standing; 3) Continuity - the project was suspended for long; 4) High priority; and 5) Strong counterpart agency.

3.PRINCIPAL SOURCE OF INFORMATION
①, ②, ③, ④

和名 インテルサット標準A地球局建設計画



{F/S,D/D}

# PROJECT SUMMARY (F/S)

Compiled Mar.1990
Revised Mar.1996

AFR ZWE/A 301/87

## I. OUTLINE OF STUDY

1.COUNTRY: Zimbabwe

2.NAME OF STUDY:
Medium Size Dams in Masvingo Province

3.SECTOR
Agriculture/(Agriculture in)General

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY
Ministry of Energy, Water Resources and Development

7.OBJECTIVES OF STUDY
Implementation of an irrigation project

8.DATE OF S/W: 1986/2

9.CONSULTANT(S)
Sanyu Consultants Inc.
Nippon Giken Inc.

10.STUDY TEAM

No.of Members 11
Period Jul.1986-Mar.1987(9 months)

| Total M/M | Japan | Field |
|---|---|---|
| 99.20 | 41.70 | 57.50 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY
Geographical Survey, Soil Test, Topographic Survey and Mapping

12.EXPENDITURE

| | |
|---|---|
| Total | 360,096 (¥'000) |
| Contracted | 345,035 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA
Masvingo Province

2.PROJECT COST (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 20,451 | 11,048 | 9,403 |
| 2) | | | |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

| | Phase II Dam 1 | Phase II Dam 2 | Phase III Dam 3 | Phase IV Dam 4 | Phase IV Dam 5 | Phase V Dam 6 |
|---|---|---|---|---|---|---|
| 1. Dam/Resovior | | | | | | |
| Storage capacity (MCM) | 6.65 | 5.67 | 1.83 | 2.25 | 1.45 | 3.13 |
| height (m) | 12.7 | 18.8 | 18.7 | 18.8 | 18.4 | 19.3 |
| length (m) | 1,70 | 460 | 920 | 580 | 700 | 625 |
| 2. Pumping Station | | | | | | |
| volume (l/s) | 54 | 76 | 49 | 74 | 23 | 151 |
| expansion (m) | 5,600 | 7,940 | 4,720 | 870 | 860 | 860 |
| 3. Farm pond | | | | | | |
| volume (m3) | 4,600 | 6,500 | 4,300 | 4,300 | 1,400 | 8,700 |
| 4. Irrigation | 44 | 70 | 51 | 50 | 21 | 100 |

Imp. Period: 1986.7-1987.3

4.FEASIBILITY AND ITS ASSUMPTIONS

Feasibility: Yes/No

| | | | |
|---|---|---|---|
| EIRR1) | 5.80 | FIRR1) | |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:
The study aims to make the water resources development plan in the communal land in Masvingo Province to supply water for irrigation, domestic and animal use.

[Development Impacts]
Application of irrigation water will increase the unit yield to 5 times and will ensure double cropping. Accordingly, the production will increase to 10 times.

5.TECHNICAL TRANSFER
1)Trainee in Japan (1)
2)OJT

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- [■] Completed or in Progress
  - (●) Completed
  - ( ) Partially Completed
  - ( ) Implementing
  - ( ) Processing
- [ ] Promoting
- [ ] Delayed or Suspended
- [ ] Discontinued or Cancelled

(Description)
The project is to be implemented by the Japanese Grant Aid.

1989.05 Basic Design completed
1989.10 E/N (1251 million yen)
1990 Phase I Supply of Machines and Equipment completed
1991 Phase II Dam 1 and 2: construction completed (998 million yen )
1992 Phase III Dam 3: construction completed (536 million yen)
1993 Phase IV Dam 4 and 5: under construction (985 million yen)
1994 Phase V Dam 6: scheduled to start (655 million yen)

(FY1993 Overseas Survey)
No additional information.

(FY1994 Domestic Survey)
The construction of Phase V is planned to be completed on Feb. 1995.

(FY1995 Domestic Survey)
Mar., 1995 the construction works of Phase V was completed.

(FY1995 Overseas Survey)
As the completion of Phase V, this project is completed. The attainment of self-sufficiency and the improvement of the living standard in the communal lands are expected.

2.MAJOR REASONS FOR PRESENT STATUS
The medium-size dams projects is one of the most important projects of the Zimbabwean Government. The project aims to alleviate the poverty of the farmers in communal land. It is worth to be implemented by Japanese Grant Aid.

3.PRINCIPAL SOURCE OF INFORMATION
①、②、③

和名 マシンニ/中規模かんがい計画



{F/S,D/D}

# PROJECT SUMMARY (F/S)

Compiled Mar.1992
Revised Mar.1996

AFR ZWE/A 302/90

## I. OUTLINE OF STUDY

1.COUNTRY: Zimbabwe

2.NAME OF STUDY: Nyakomba Irrigation Development Project

3.SECTOR: Agriculture/(Agriculture in)General

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY: Republic of Zimbabwe, Ministry of Lands, Agriculture and Rural Resettlement (MLARR)

7.OBJECTIVES OF STUDY: To formulate the development plan and to prepare the feasibility study report

8.DATE OF S/W: 1989/3

9.CONSULTANT(S): Taiyo Consultants Co., Ltd.
Sanyu Consultants Inc.

10.STUDY TEAM

No.of Members 8

Period Aug.1989-Aug.1990(13 months)

| Total M/M | Japan | Field |
|---|---|---|
| 36.62 | 14.67 | 23.95 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY: Topographic survey
Soil Analysis

12.EXPENDITURE

| | |
|---|---|
| Total | 174,974 (¥'000) |
| Contracted | 138,591 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Nyakomba Ward, Saunyama Communal land, Nyanga District, Manicaland Province

2.PROJECT COST (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 15,776 | 10,076 | 5,690 |
| 2) | | | |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

| | |
|---|---|
| 1)Pump station | 5 nos. |
| 2)Main supply pipe line | 14,320 m |
| 3)Farm pond | 5 nos. |
| 4)Open canal (concrete) | 38,380 m |
| 5)Farm road (gravel pave.) | 31,180 m |
| 6)Drainage canal | 33,700 m |
| 7)Project management office | 1 L.S. |
| 8)Marketing facilities | 1 L.S. |

Imp. Period: 1992. -1995.

4.FEASIBILITY AND ITS ASSUMPTIONS — Feasibility: Yes/No

| | | | |
|---|---|---|---|
| EIRR1) | 5.50 | FIRR1) | 4.25 |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:

[Conditions]
- Project life : 50 years
- Opportunity cost of capital : 2.5%
(National standard of food security scheme in Zimbabwe)
: US$ 1.0 = Z$ 2.304

[Development Impacts]
- To make the non-white civil administration system stable through the improvement of communal land and changing the small comunal agricultural system to a commercial one. (White people still hold the control of the economic system and land ownership even after independence.)
- To establish model and pilot projects for future irrigation development projects on other communal land.

5.TECHNICAL TRANSFER: Counterpart training 2 persons (Jun. and Jul. 1990)

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- [■] Completed or in Progress
- [ ] Promoting
- ○ Completed
- ○ Partially Completed
- [ ] Delayed or Suspended
- ○ Implementing
- ● Processing
- [ ] Discontinued or Cancelled

(Description)

The request letter from Zimbabwean side on this project has arrived at the Ministry of Foreign Affairs in Japan through the Embassy of Japan in Zimbabwe.

(FY1993 Overseas Survey)
(1) The grant aid for the project was officially requested to Ministry of Foreign Affairs through Japanese Embassy in Harare.
(2) This project will be one of the candidates for a Japanese grant aid project after Masvingo medium scale irrigation grant aid project

(FY1994 Domestic Survey)
The B/D Study has been carried out Since Sep.1994.

(FY1995 Domestic Survey)
E/N and the consultant agreement have been signed until Aug., 1995. Now it is underway of detailed designing works.

2.MAJOR REASONS FOR PRESENT STATUS

3.PRINCIPAL SOURCE OF INFORMATION: ①, ②

和名 ニヤコンバ地方灌漑計画

{F/S,D/D}

# PROJECT SUMMARY (F/S)

Compiled Mar.1994
Revised Mar.1996

AFR ZWE/S 302/92

## I. OUTLINE OF STUDY

**1.COUNTRY** Zimbabwe

**2.NAME OF STUDY**
Rural Telecommunications Network Project

**3.SECTOR**
Communications & B/(Comms. & Bread. in)General

**4.REFERENCE NO.**

**5.TYPE OF STUDY** F/S

**6.COUNTERPART AGENCY**
Posts and Telecommunications Corporation (PTC)

**7.OBJECTIVES OF STUDY**
To conduct a feasibility study on rural telecommunications network for 6 fural exchange areas: Beatrice, Kezi, Murambinda, Nkayi, Gutu, Chatsworth

**8.DATE OF S/W** 1991/2

**9.CONSULTANT(S)**
Nippon Telecommunication Consulting Co., Ltd.

**10.STUDY TEAM**

No.of Members 6
Period May.1992-Nov.1992(6 months)

| Total M/M | Japan | Field |
|---|---|---|
| 14.97 | 7.10 | 7.87 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
None

**12.EXPENDITURE**

| | |
|---|---|
| Total | 156,478 (¥'000) |
| Contracted | 138,754 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
6 Rural exchange areas:BEATRICE/BTR (MASHONALAND), NKAYI/NKI (MIDLANDS), KEZI/KEZ (MATABELELAND), GUTU/GTU (MASVINGO), MURAMBINDA/MRB (MANKALAND), CHATSWORTH/CHS (MASVINGO)

**2.PROJECT COST** (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 31,449 | 4,730 | 26,719 |
| 2) | | | |
| 3) | | | |

**3.CONTENTS OF MAJOR PROJECT(S)**
Project cost summary to implement the PJ as follows: (Unit thousand $US)

| | Total | BTR | KEZ | MRB | NKI | GTU | CHS | TRAINING CENTRE |
|---|---|---|---|---|---|---|---|---|
| Switch Sys. | 1965 | 402 | 291 | 321 | 342 | 447 | 162 | |
| Transmission Sys. | 5467 | 838 | 1118 | 1486 | 643 | 757 | 655 | |
| External Plant | 5117 | 1258 | 610 | 790 | 678 | 1075 | 706 | |
| Power Plant | 1972 | 320 | 422 | 453 | 311 | 245 | 211 | |
| Ant. Mast | 1543 | 251 | 251 | 385 | 308 | 97 | 110 | |
| Eq. Shelter | 1194 | 272 | 272 | 237 | 139 | 240 | 130 | |
| Test Eq.& Spares | 798 | 81 | 81 | 81 | 81 | 81 | 81 | 312 |
| Maintenance Vehicles | 209 | 38 | 38 | 38 | 38 | 38 | 19 | |
| Transport/ inst.cost | 10560 | 1987 | 1968 | 2271 | 1572 | 1564 | 1131 | 67 |
| Engineering Service | 2624 | | | | | | | |

Imp. Period: 1994. -1996.

**4.FEASIBILITY AND ITS ASSUMPTIONS** Feasibility: Yes/No

| | | | |
|---|---|---|---|
| EIRR1) | 62.00 | FIRR1) | 19.51 |
| EIRR2) | 151.00 | FIRR2) | 19.51 |
| EIRR3) | 167.00 | FIRR3) | 19.51 |

**Conditions and Development Impacts:**
* If the PJ is undertaken with the help of a Grant Aid, implementation is likely to contribute to the enhancement of the Econ. Development & the improvement of the social welfare.

-Willingness to pay

| | Average value | Mainmun value |
|---|---|---|
| Call Charge | Z$ 1/call | Z$ 5/call |
| Instl. Fee | Z$ 150/line | Z$ 2000/line |
| Rental Fee | Z$ 20/Month | Z$ 150/Month |

- Economic Benefit

Case 1)
Premium of call charges/call : Z$ 1/call
Instl. Fee/line : Z$ 150
Rental Fee/Mouth : Z$ 20

Case 3)
charges/call : Z$ 5/call
Instl. Fee/line : Z$ 6,760.4
Rental Fee/Month : Z$ 5,313.6

Case 2) Assumed premium of each exchanges (Z$)

| | (BTR) | (KEZ) | (MRB) | (NKI) | (GTU) | (CHS) |
|---|---|---|---|---|---|---|
| Call Charges/call | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Instl. Fee | 5,764.4 | 6,760.4 | 4,668.0 | 4,668.0 | 4,668.0 | 4,668.0 |
| Rental Fee/annual | 3,825.6 | 5,313.6 | 2,337.6 | 2,337.6 | 2,337.6 | 2,337.6 |

**5.TECHNICAL TRANSFER**
1.OJT and Technology transfer were conducted for counterpart during the survey & the study
2.Trainees were accepted twice in Japan at the time of making IT/R sport & DF/R.

## III. PRESENT STATUS OF STUDIED PROJECT

**1.PRESENT STATUS**

- [■] Completed or in Progress
- [ ] Promoting
- ○ Completed
- ○ Partially Completed
- [ ] Delayed or Suspended
- ❸ Implementing
- ○ Processing
- [ ] Discontinued or Cancelled

(Description)
(FY1993 Overseas Survey)
(1)The gov't of Zimbabwe requested a grant aid for the project to Japan.
(2)Ministry of Foreign Affair is coordinating with other grant aid project in Zimbabwe.

(FY1994 Domestic Survey)(FY1995 Domestic Survey)
No additional information.

(FY1995 Overseas Survey)
GTU/CHS - The request for the OECF loan has been made.
MRB/BTR - It is scheduled to be implemented with the own fund of PTC.
NKI - The request for funding is made to the German Bank (KFW).
KER - It is being implemented with the assistance of KFW. It is scheduled to be completed in FY1996/97.

**2.MAJOR REASONS FOR PRESENT STATUS**
The completion of the project is importatnt to facilitate faster and easier implementation of the government development programs in the rural area where 70% of the population reside.

**3.PRINCIPAL SOURCE OF INFORMATION**
①, ②, ③

和名 地方電気通信網整備計画



{F/S,D/D}

# PROJECT SUMMARY (F/S)

Compiled Mar.1986
Revised Mar.1996

CSA ARG/S 301/79

## I. OUTLINE OF STUDY

1.COUNTRY: Argentina

2.NAME OF STUDY: Deep Water Port Construction Project at Punta Medanos

3.SECTOR: Transportation/Port

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY: Ministerio de Economia, Secretaria de Estado de Intereses Maritimos (SEIM)

7.OBJECTIVES OF STUDY: Technical Study on the location of port and its planning

8.DATE OF S/W: 1979/5

9.CONSULTANT(S): Overseas Coastal Area Development Institute

10.STUDY TEAM

No.of Members 4

Period Apr.1979-Jul.1979(3 months)

| Total M/M | Japan | Field |
|---|---|---|
| 4.10 | 2.30 | 1.80 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:

12.EXPENDITURE

| | |
|---|---|
| Total | 14,324 (¥'000) |
| Contracted | 6,587 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Horn Medenos, Province of Buenos Aires

2.PROJECT COST (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 923,472 | | |
| 2) | | | |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

Planning for a deep sea for grain export, iron ore and coal import.
Breakwater: north 4100m, south 1900m Breakwater: 2 total length 800m
Piers : 10 for fishery, 2 x 400m for grain export
Quays : 500m for containers, 500m for iron ores
exclusive quays for steel mill and industry
Fishery related: freezing and cold storage facilities, market, factories

Imp. Period:

4.FEASIBILITY AND ITS ASSUMPTIONS

Feasibility: Yes/No

| | |
|---|---|
| EIRR1) | FIRR1) |
| EIRR2) | FIRR2) |
| EIRR3) | FIRR3) |

Conditions and Development Impacts:
- Coping with containerization
- Fishery port is expected to contribute to the development of the coast and to alleviate the congestion of Port Mar del Plata.

5.TECHNICAL TRANSFER:

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- [ ] Completed or in Progress
  - ○ Completed
  - ○ Partially Completed
  - ○ Implementing
  - ○ Processing
- [ ] Promoting
- [ ] Delayed or Suspended
- [■] Discontinued or Cancelled

(Description)

(FY 1991 Overseas Survey)
COFUAP (Deepsea Ports Construction Commission) was disbanded in 1987, and the construction of new ports has been frozen since then. Emphasis was shifted to the strengthening of the existing ports, and it was decided to deepen Bahia Blanca and Quequen Ports. In late 1991, the dredging was completed to the depths of 40 - 45 feet at Bahia Blanca, while Quequen is being dredged to the depth of 40 feet.
The Government has been promoting the decentralization of administration, and the port facilites have been gradually transferred from the national government to provincial or local authorities. According to the new Port Law now under parliamentary deliberations, only five ports (Buenos Aires, Quequen, Bahia Blanca, Santa Fe and Ushuaia) will remain under AGP. The operation of the five ports will be eventually privatized in the future.
The economic policy of the present Government has been emphasizing the privatization of public enterprises, deregulation and decentralization. Investments in port facilities along Parana, Paraguay and La Plate Rivers will be undertaken increasingly by the private sector.

2.MAJOR REASONS FOR PRESENT STATUS:

3.PRINCIPAL SOURCE OF INFORMATION

①, ②

和名 プンタ・メダノス深水港建設計画

{F/S,D/D}

# PROJECT SUMMARY (M/P)

Compiled Mar.1990
Revised Mar.1996

CSA ARG/S 101/86

## I. OUTLINE OF STUDY

1.COUNTRY: Argentina

2.NAME OF STUDY: Study on Economic Development

3.SECTOR: Development Plan/Integrated Regional Development Plan

4.REFERENCE NO.:

5.TYPE OF STUDY: M/P

6.COUNTERPART AGENCY: Planning Secretariat, Presidency of the Nation

7.OBJECTIVES OF STUDY:
To suggest development policies and measures concerning five sectors of macroeconomic management, agriculture, industry, transportation and export.

8.DATE OF S/W: 1985/8

9.CONSULTANT(S):
International Development Center of Japan

10.STUDY TEAM

No.of Members 31

Period Aug.1985-Jan.1987(18 months)

| Total M/M | Japan | Field |
|---|---|---|
| 95.36 | 45.36 | 50.00 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:

12.EXPENDITURE

| | |
|---|---|
| Total | 262,407 (¥'000) |
| Contracted | 316,373 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA:
The entire country (2.78 million ha)

2.PROJECT COST

| (US$1,000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | | | |
| 2) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

In response to the specific requests from the Argentine side, the study examined the following five sectors and offered proposals which would be effective to reduce their constraints and to contribute to the reactivation of the Argentine economy.
1)Macroeconomy(macroeconomic policies, the role of economic development plans, etc.)
2)Agriculture(crops, livestock and fisheries)
3)Industry(general policy, petrochemical industry, electronics industry, agroindustry and small and medium industries)
4)Transportation(general policy, utilization of Parana and La Plata Rivers for grain transportation, containerization, cargo terminal in Buenos Aires, and alternative accesses toward the Pacific
5)Export(export promotion policies and measures, role of international trading companies, etc.)

4.CONDITIONS AND DEVELOPMENT IMPACTS

Policy suggestions on above 5 sections are as follows:
1.Macroeconomy Analysis
(1)Continuation and coordination of Economic Policies, (2)Privatization of public enterprises, (3)Strengthening of support systems for researches and development, (4)Development of efficient infrastructure.
2.Agsiculture
(1)Further privatization of grain handling facilities, (2)Formulation of a coordinated policy for plant protection, (3)Cost reduction and development of farm machinery, (4)Formulatin of a national strategy in biotechnology research,
(5)Stability and profitability of cattle farming and the meatprocessing industry, (6)Renovation and modernization of the fishing capacity.
3.Industry
(1)Introduction of competitive conditions to industrial producti,
(2)Formulation of government policies through exchanges of opinions with private sector(Suggestions are continued. You can see them on the screen of Computer), (3)Strengthing of support systems for technology development, (4)Establishment of a long term capital market, (5)Domestic production for micro-computers, (6)Set-up of a financing schemes for the software industry, (7)Support for the growth of the NC machine tool industry, (8)Formulation and implementation of policy measures to develop petrochemical industries, (9)Systematic upgrading of packaging technology, (10)Financing schemes for the promotion of smal and medium industries.
4.Transportation
(1)Formulation of policies to develop motional transportaton systems,
(2)Efficient utilization for grain transportation of parana and La Plate rivers, (3)Promotion of containerization, (4)Development of cargoterminals

5.TECHNICAL TRANSFER

Four counterparts participated in the JICA training program.
The seminar is held in Buenos Aires.

## III. PRESENT STATUS OF STUDY RESULTS

1.PRESENT STATUS

- [■] In Progress or In Use
- [ ] Delayed
- [ ] Discontinued

(Description)

Based on the recommendations of the study, a number of Japanese experts in various fields of industry and fisheries have been sent to Argentina. The technical cooperation project on packaging technology which began in March 1989 was based on one of the study's recommendations.

Since President Corlos Menem took office in July 1989, the Report was highly appreciated by the Government of its consistency with a series of economic reforms undertaken by the Government. When Dr.D.F. Cavallo visited Japan in December 1992, a follow-up study(the second study) was officially requested, and a preliminary study mission was dispatched to Aregentina in April 1994. Since July 1994, JICA study team was dispatched to Aregentina and surrounding countries. The new dimension of the second study was to expand economic relations with East Asia, a regon of sustained dynamic growth through the 1990s.

(FY1991 Oveseas Survey)
In Sept. 1991, the Planning Secretariat, the counterpart agency of the JICA study, was reorganized into the Economic Planning Secretariat under the Ministry of Economy. The functions of the new Secretariat are compilation and analysis of the economic trends rather than the identification and promotion of new projects / programs.
The improvement of administrative efficiency, privatization and other general policy measures, which were discussed in the JICA study, have been proceeding rapidly under the policy package adopted in accordance with the Currency Exchange Law of April 1991.
The Governmennt has been pushing various measures of the fiscal reform and administative reorganization and rationalization in adherence to the IMF conditionality. Accordingly, specific recommendations of the study (such as institutional credit, infrastructural development and preferencial taxation) are yet to make impacts on policy makers.
The report of the study has been utilized extensively when and where various issues of long-term development are discussed.

(FY1995 Domestic Survey)
Please turn over.

(FY1995 Domestic Survey)
Taking into consideration that the political package since 1991 was very effective to stabilize the economy, 2nd phase of the study on Economic Development is requested for sake of the economic growth continuing much longer term. At present, the survey works are carried on two years by JICA since 1994. The counterpart is the Investment and Trading Secretariat, Ministry of Economy. And the major object of the project is the exportation to and the investment

2.MAJOR REASONS FOR PRESENT STATUS

3.PRINCIPAL SOURCE OF INFORMATION

①, ②

和名 経済開発調査

Continued on [M/P,Basic Study,Other]

# 状況（要約表添付文書）

CSA ARG/S 101/86 (M/P)

Name of Study on Economic Development
Study

Country Argentina

Type of Study M/P

Sector Development Plan/Integrated Regional Development Plan

Present Status: In progress or In use

(Description)

Based on the recommendations of the study, a number of Japanese experts in various fields of industry and fisheries have been sent to Argentina. The technical cooperation project on packaging technology which began in March 1989 was based on one of the study's recommendations.

Since President Corlos Menen took office in July 1989, the Report was highly appreciated by the Government of its consistency with a series of economic reforms undertaken by the Government. When Dr.D.F. Cavallo visited Japan in December 1992, a follow-up study(the second study) was officially requested, and a preliminary study mission was dispatched to Aregentina in April 1994. Since July 1994, JICA study team was dispatched to Aregentina and surrounding countries. The new dimension of the second study was to expand economic relations with East Asia, a region of sustained dynamic growth through the 1990s.

(FY1991 Oveseas Survey)

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(FY1995 Domestic Survey)

Please turn over.

(FY1995 Domestic Survey)

Taking into consideration that the political package since 1991 was very effective to stabilize the economy, 2nd phase of the study on Economic Development is requested for sake of the economic growth continuing much longer term. At present, the survey works are carried on two years by JICA since 1994. The counterpart is the Investment and Trading Secretariat, Ministry of Economy. And the major object of the project is the exportation to and the investment from Eastern Asia.

(FY1995 Overseas Survey)

The fundamental targets of this project are to privatize the enterprises, to cut the state subsidy for the public enterprises and to improve the profit distribution system, in order to activate the national economy and to promote the exporting business, and try to create the economic atomosphere which is competitable in the world market by means of cost saving for production and improvement.

Based on the experiences obtained, final recommendations of the project report and the recent trends of economical growth, forcasting the situations at March, 1996, a part of the contents of the OKITA-I project has been changed, aiming at the maximum effects for the Government and the enterprises concerns.

# PROJECT SUMMARY (F/S)

Compiled Mar.1990
Revised Mar.1996

CSA ARG/S 302/86

## I. OUTLINE OF STUDY

1.COUNTRY: Argentina

2.NAME OF STUDY: Preliminary Design for the Amplification of an Inspection and Repairing Workshop for Electric Rolling Stock

3.SECTOR: Transportation/Railway

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY: Argentine Railway(F.S.)

7.OBJECTIVES OF STUDY: F/S for reinforcing a workshop for the inspection and repair of electric railcars for AC-electrified sections on the General Roca Line, and a preliminary design of an optimum plan.

8.DATE OF S/W: 1984/7

9.CONSULTANT(S): Japan Railway Technical Service

10.STUDY TEAM

No.of Members 10

Period Feb.1985-Sep.1986(19 months)

| Total M/M | Japan | Field |
|---|---|---|
| 63.93 | 39.63 | 24.30 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:

12.EXPENDITURE

| | |
|---|---|
| Total | 191,378 (¥'000) |
| Contracted | 184,115 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA

A site 10km away from Plaza Constitucion along the General Roca Line

2.PROJECT COST

| | | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|---|
| (US$1,000) | 1) | 19,282 | 17,016 | 2,266 |
| (US$1=251Yen) | 2) | | | |
| | 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

Based on the experience of the first stage, a plan in the second stage of electrification of the general Roca Line was made up including reinforcing a workshop and introducing related facilities.
F/S on the expention of a existing workship.
The existing demand-expectation and transport-plan made up by Argentina Railway (F.A) was reexamined for the second stage.
Through the above work, the needed amount of electric rolling stock was calculated. Then several plans for reinforcing a workshop was made up. At last the best plan was selected by technical and economical points of view.
<Preliminary design>
The amount of rolling stocks needed during the second stage was calculated 320. So the workshop should be expanded along with this scale.
<Facilities for inspection and repairing> various sorts.
Construction; First and second workshops, related buildings, management building, railway truck and wiring. Railway truck in the yard consists of come-and-go line, test line, detention line and etc.
Facilities; light, signal, telecommunication, drainage, water-supply etc.

Imp. Period: 1985.2-1986.9

4.FEASIBILITY AND ITS ASSUMPTIONS

Feasibility: Yes/No

| | |
|---|---|
| EIRR1) | FIRR1) |
| EIRR2) | FIRR2) |
| EIRR3) | FIRR3) |

Conditions and Development Impacts:
Development impacts: Reinforcement of inspection and repair facilities for electric railcars will ensure punctual and safe train operation.

5.TECHNICAL TRANSFER

Technical transfers occurred through working together with counterparts on site investigations, reports, etc.

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- [ ] Completed or in Progress
  - ○ Completed
  - ○ Partially Completed
  - ○ Implementing
  - ○ Processing
- [ ] Promoting
- [ ] Delayed or Suspended
- [x] Discontinued or Cancelled

(Description)
The electrification of the General Roca Line was commenced in 1981 and completed in 1985. The system (25kv, 50Hz) was new in Argentine Railways(FA), and there was no facility for inspection and repair of the introduced railcars. FA thus planned to establish a new inspection and repair facility by Japanese technical assistance.
Owing to the worsening of the economic situation, the electrification program was scaled down and the construction of the new facility was de facto cancelled. The rehabilitation and improvement of the existing facilities was subsequently proposed as an alternative.

(FY1991 Overseas Survey)
In order to simplify the process of privatization, FA was divided in April 1991, and FENESA was created for metropolitan railways. Subsequently, preparations have been going on for the privatization of each railway line. To date, tenders have been called for the Mitre, Urquiza and Sarmiento Lines. Preparation of the tender documents has not been completed for the Roca and San Martin Lines. Therefore, it is yet hard to know what will happen to the inspection and repair functions after privatization. However, Escalada Plant still remains the center of inspection and repair and appears likely to remain as such in the future.

(FY1994 Domestic Survey)
No additional information.

2.MAJOR REASONS FOR PRESENT STATUS

Owing mainly to economic factors, there has been no progress in electrification.

3.PRINCIPAL SOURCE OF INFORMATION

①, ②

和名 国鉄車輌検修工場建設計画

{F/S,D/D}

# PROJECT SUMMARY (M/P)

Compiled Mar.1990
Revised Mar.1996

CSA ARG/S 102/87

## I. OUTLINE OF STUDY

**1.COUNTRY** Argentina

**2.NAME OF STUDY**
Development Plan for the Telecommunication and Broadcasting Networks in the Province of Mendoza

**3.SECTOR**
Communications & B/Comms. & Broad. in General

**4.REFERENCE NO.**

**5.TYPE OF STUDY** M/P

**6.COUNTERPART AGENCY**
Direccion de Communicaciones, Ministerio de Obras y Servicios Publicos, Provincia de Mendoza

**7.OBJECTIVES OF STUDY**
Proposing a long-term development and improvement plan for the telecommunications networks and an outline for a long-term development and improvement plan for the broadcasting networks up to the year of 2005.

**8.DATE OF S/W** 1986/2

**9.CONSULTANT(S)**
Japan Telecom, Eng. and Consulting Service

**10.STUDY TEAM**

| No.of Members | 10 | |
|---|---|---|
| Period | Jul.1986-Mar.1987(15 months) | |
| | Jun.1987-Nov.1987 | |
| Total M/M | Japan | Field |
| 76.23 | 41.70 | 34.53 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
None

**12.EXPENDITURE**

| | |
|---|---|
| Total | 228,872 (¥'000) |
| Contracted | 207,116 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
Province of Mendoza (about 150,000 sq.km)

**2.PROJECT COST**

| (US$1,000) | | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|---|
| (US$1=1.25 Austral) | 1) | 291,540 | 29,153 | 262,387 |
| | 2) | 28,279 | | |

**3.CONTENTS OF MAJOR PROJECT(S)**

1. Long-term development and improvement plan for the telecommunications networks up to the year 2005.

1) Phase 1(1991-1995)(Total project cost US$80,082 thousand)
(1)Subscriber telephone installation(STI)54,800 (2)Public telephone installation (PTI) 1,500 (3)Rural telephone installation(RTI) 800 (4)Local exchange installation(LEI) 79,144 terminals(t.)
(5)Toll exchange installation (TEI) 2,200t.

2) Phase 2 (1996-2000) (Total project cost US$81,602 thousand)
(1)STI 75,200 (2)PTI 1,400 (3)RTI 400 (4)LEI 92,070t. (5)TEI 1,800t.

3) Phase 3 (2001-2005) (Total project cost US$129,856 thousand)
(1)STI 106,100 (2)PTI 1,500 (3)RTI 800 (4)LEI 161,081t. (5)TEI 3,000t.

2. Long-term development and improvement for the broadcasting networks up to the year 2005: 1)HF transmitter installation and renewal 13 sets; 2)FM transmitter installation 76 sets; 3)TV transmitter installation 67 sets; 4)Satellite relay construciton 3 links; 5)Terrestrial line addition for TV use 1 line

**4.CONDITIONS AND DEVELOPMENT IMPACTS**

1. Long-term development and improvement plan for the telecommunications networks up to the year 2005.
Conditions: 1)Facilities usefull life 20 years; 2)Corporation tax 3%
Financial internal rate of return 12%(including rural telephones)

Improvement Impacts: 1)Telephone demand in the province will mostly be satisfied, and telephone services will also become available for the areas where the service is not provided at present; 2)Telephone density will increase from 6.3 to 18.5 main lines per 100 inhabitants in the year 2005. The density of public telephones will also increase from 0.7 to 2.5 units per 1,000 inhabitants in the same year. 3)As the result of the digitalization of exchanges, diversified new telephone services can be provided economically.

2. Long-term development and improvement for the broadcasting networks up to the year 2005.
Improvement Impacts: 1)Enrichment of educational broadcast programs can reduce the number of teachers and educational facilities; 2)Rural inhabitants can make closer contact with the central government and participate easily in national policy. 3)Improvement of educational and recreational broadcast programs will enrich the spiritual life of the rural inhabitants.

**5.TECHNICAL TRANSFER**
1) Joint implementation of every field survey
2) Training of four counterparts in Japan (Drawing up reports, Telecommunications two persons, Broadcasting one person)

## III. PRESENT STATUS OF STUDY RESULTS

**1.PRESENT STATUS**
- ■ In Progress or In Use
- ☐ Delayed
- ☐ Discontinued

**(Description)**
The Provincial Government of the of Mendoza uses the study results as guidelines for the private sector.

(FY1991 Overseas Survey)
Telecommunication is still operated by CAT, but the negotiations have been going on between CAT and Telefonica. Before long, telecommunication will be transferred to Telefonica. On the basis of the proposed master plan, the Provincial Govenment is planning to undertake a feasibility study of the telephone network development.

(FY1994 Domestic Survey)(FY1995 Domestic Survey)
No additional information.

(FY1995 Overseas Survey)
The result of similar survey works carried out by the third country is also the same as the result of JICA's survey at the main points. The plans and the recommendations of this survey works will be adopted as the political targets for long time at this province and also as the model of the development plan in future.

**2.MAJOR REASONS FOR PRESENT STATUS**
Financing

**3.PRINCIPAL SOURCE OF INFORMATION**
①, ②

和名 メンドーサ州電気通信・放送網整備拡充計画

{M/P,Basic Study,Other}

# PROJECT SUMMARY (M/P)

Compiled Mar.1990
Revised Mar.1996

CSA ARG/A 101/88

## I. OUTLINE OF STUDY

1.COUNTRY: Argentina

2.NAME OF STUDY: Proyecto de desarrollo agricola integrado en el area adyacente a la represa de Yacyreta e la provincia de Corrientes

3.SECTOR: Agriculture/(Agriculture in)General

4.REFERENCE NO.:

5.TYPE OF STUDY: M/P

6.COUNTERPART AGENCY: Government of the Province of Corrientes (Ministry of Agriculture and Animal Husbandry)

7.OBJECTIVES OF STUDY: To elaborate a master plan for the execution of integrated agricultural development aiming to the establishment of high-productivity agriculture in the area of approximately 290,000ha in the north part of Corrientes province utilizing available land resources and 108m3/s of irrigation water from the Yacyreta dam being [illegible]

8.DATE OF S/W: 1986/9

9.CONSULTANT(S): Japan Agricultural Land Development Agency

10.STUDY TEAM

No.of Members 21

Period Feb.1987-Dec.1988(23 months)

| Total M/M | Japan | Field |
|---|---|---|
| 177.00 | 75.00 | 102.00 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY: Data analysis of LANDSAT Imagery

12.EXPENDITURE

| | |
|---|---|
| Total | 479,165 (¥'000) |
| Contracted | 390,505 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Loret and San Carlos Area located in North Part of Province of Corrientes (Population: 660,000, Area 290,000 ha)

2.PROJECT COST

| (US$1,000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 203,981 | 86,654 | 117,327 |
| by 1986 price 2) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

Drainage Canal:258km,
Irrigation Canal:256km,
Road:330km,
Agricultural Land Reclamation:119,800 hs,
Agricultural Facility:6 sets,
Agricultural Technics center:1 set,
Pump Facility which supplies water by its pressure:6sets
1. Irrigation project (37,000ha in the lower part of Yacyreta dam and 4,000ha in San Carlos area) 2. Drainage project (50km long of primary channel and 230km of main channel) 3. Farm road project (100km long of main road and 323km of blanch road) 4. Agricultural land development project (100km long of main road and 323km of blanch road)
4. Agricultural land development project (mode) projects for paddy field, dry field, horticulture under/without structure: 134,000ha of whole area) 5. Cultivation plan (promotion of rice production mainly and introduction of promising cereals, vegetables and fruits)
6. Farming programme 7. Livestock and grassland improvement
8. Afforestation programme 9. Agriculture supporting service
10. Establishment of agricultural training center 11. Food processing and storage facilities 12. Other social infrastructure improvement plan (electrification, telecommunication, water supply, education, medical service etc.)

4.CONDITIONS AND DEVELOPMENT IMPACTS

Various effects are expected as follows;
1.Agricultural production cost will be reduced as a result of converting pump irrigation into gravity irrigation.
2.Available use of machineries and appropriate farming operation scale will improve conditions of farming operation and cropping technics.
3.Distribution conditions such as roads and stock facilities will be improved.
This study is considered to contribute to strengthening of international competitiveness, and balanced regional development including correction of difference of income through production increase of main crops (rice 260,000 ton, vegetables 30,000 ton, grains 100,000 ton, Citrus fruits 50,000 ton)
It is required to modify current import-export inbalance and to reduce international debt in Argentine Republic by means of promoting export of agricultural products. In this sense, to increase agricultural production of rice, vegetables and fruits as well as to reduce productio cost in the corresponding area are quite important and expected for the improvement of international compatibility and socio-economic conditions. This study also supports and benefits many small size farmers for the improvement of living.

5.TECHNICAL TRANSFER: Co-operative work to make a report

## III. PRESENT STATUS OF STUDY RESULTS

1.PRESENT STATUS

- [x] In Progress or In Use
- [ ] Delayed
- [ ] Discontinued

(Description)

Based on the findings of the study, feasibility studies are being undertaken on parts of the study area, while some construction works are underway. Specifically, nine small-scale dams for paddy irrigation (capacities ranging from 400 to 2,000 ha) are under study by funds of agricultural operaters with the technical advice from the government. Concerning the irrigable area of 49,000 ha along the Parana River basin, the provincial government and the group of producers jointly undertook the construction of the 12km drainage canals, which enabled the agricultural production.

(FY1991 Overseas Survey)
On the basis of M/P, the state government is planning to implement two projects.
1) Drainge project: 12km drainage canal is under construction.
2) Vegetable cultivation mini-project: JICA is implementing technical coorperation at the vegetable cultivation center.

(FY1994 Domestic Survey)
No additional information.

(FY1995 Domestic Survey)
By the modification of the design and the completion of construction, it becomes necessary to reinvestigate the Yacyreta Dam.

(FY1995 Overseas Survey)
The performances of this survey works such as maps and data are utilized widely for the other projects for the development of the Province of Corrientes.
To continue this Rind of survey work is very important to prove the activation of industrial economy and to make it easier to draw up various secondary plans.

2.MAJOR REASONS FOR PRESENT STATUS

3.PRINCIPAL SOURCE OF INFORMATION

①、②

和名 ヤシレタダム隣接地域農業総合開発計画

{M/P,Basic Study,Other}

# PROJECT SUMMARY (Basic Study)

Compiled Sep.1995
Revised Mar.1996

CSA ARG/S 501/94

## I. OUTLINE OF STUDY

**1.COUNTRY** Argentina

**2.NAME OF STUDY**
Topographic mapping of North-east region in Argentine Republic

**3.SECTOR**
Social Infrastructu/Survey & Mapping

**4.REFERENCE NO.**

**5.TYPE OF STUDY** Basic Study

**6.COUNTERPART AGENCY**
Instituto Geografico Militar (IGM)

**7.OBJECTIVES OF STUDY**
Topographic mapping of North-east region of the country with a scale of 1:100,000, and to arrange digital mapping data.

**8.DATE OF S/W** 1991/11

**9.CONSULTANT(S)**
International Engineering Consultants Association
Kokusai Kougyo Co., Ltd.

**10.STUDY TEAM**

| | No.of Members | Period | |
|---|---|---|---|
| | 19 | | |
| Total M/M | Japan | Field | |
| 150.38 | 13.30 | 137.08 | |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
Shooting aerial photograph

**12.EXPENDITURE**

| | |
|---|---|
| Total | 1,054,591 (¥'000) |
| Contracted | |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
North-east region in Argentine, the area spread on Misiones State and Corrientes State with an area of 52,000sq.km.

**2.PROJECT COST**

| (US$1,000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | | | |
| 2) | | | |

**3.CONTENTS OF MAJOR PROJECT(S)**
1)Shooting aerial photograph with a scale of 1:60,000.
2)Topographic mapping with a scale of 1:100,000.
3)To arrange digital mapping data.

**4.CONDITIONS AND DEVELOPMENT IMPACTS**
In Misiones State, there are still much of virgin forest and their forest industry is prosperous. In Corrientes State, there are wide spread swampy area and wide area is still not utilized except some of pasturage. And along the Palana River faced on the border line with Urguay, a big "Yashreta Dam" has been constructed and the development of electric power resources is progressing.
The topographic maps and the digital mapping data produced by this project will be expected as very useful data for the verious survey and planning works including bilateral cooperation projects at this area.

**5.TECHNICAL TRANSFER**
A series of technology from basic survey works by means of GPS to topographic mapping by the digital mapping method have been transferred.

## III. PRESENT STATUS OF STUDY RESULTS

**1.PRESENT STATUS**
■ In Progress or In Use
□ Delayed
□ Discontinued

(Description)
Topographic maps with a scale of 1:100,000 and digital mapping data become available to use them for development planning and survey works of north-eastern border area of Argentine. Aerial photographs have been taken on the area of 100,000sq.km in Misiones State and Corrientes State. These photos will be able to use for various investigation, survey and planning works at this region.

(FY1995 Overseas Survey)
The topographic maps drawn by this project are very useful to grasp the circumstances of this region.
The maps are utilized widely for the various places such as the Geographical Research Center of the Army.

**2.MAJOR REASONS FOR PRESENT STATUS**

**3.PRINCIPAL SOURCE OF INFORMATION**
①、②

但名 北東部地形図作成調査

{M/P,Basic Study,Other}

# PROJECT SUMMARY (F/S)

Compiled Mar.1986
Revised Mar.1996

CSA BOL/S 301/77

## I. OUTLINE OF STUDY

**1.COUNTRY** Bolivia

**2.NAME OF STUDY**
Viru Viru International Airport Development

**3.SECTOR**
Transportation/Air Transportaion & Airport

**4.REFERENCE NO.**

**5.TYPE OF STUDY** F/S

**6.COUNTERPART AGENCY**
AASANA/Administration of Airport and Supplementary Services for Air Navigation

**7.OBJECTIVES OF STUDY**
To forecast air transport demand and examine technical and economic feasibility of the Project

**8.DATE OF S/W** 1977/3

**9.CONSULTANT(S)**
Japan Airport Consultants, Inc.

**10.STUDY TEAM**
No.of Members 17
Period Apr.1977-Dec.1977(8 months)

| Total M/M | Japan | Field |
|---|---|---|
| 32.60 | 16.00 | 16.60 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**

**12.EXPENDITURE**

| | |
|---|---|
| Total | 124,077 (¥000) |
| Contracted | 70,820 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
Viru Viru in Santa Cruz, Bolivia

**2.PROJECT COST**
(US$1,000)
(US$1=260Yen)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 151,666 | 52,078 | 99,588 |
| 2) | 167,914 | 58,242 | 167,914 |
| 3) | | | |

**3.CONTENTS OF MAJOR PROJECT(S)**
The Study reviewed the Master Plan of the new port proposed by the Bolivian Government, and forecast the air traffic demand in the years 1985, 1990, 1995, and 2000.
1.Airfield facilities
Runway(3,200mx45m); parallel taxiway(720m in 1985, 3,500m in 2000); passenger apron(5 berths in 1985, 13 in 2000); cargo apron(2 berths in 1985, 4 in 2000)
2.Buildings
Passenger terminal(11,000 sq.m in 1185, 23,000 in 2000); cargo terminal(900 sq.m in 1985, 3,600 in 2000)
3.Navigational aids/telecommunications/Meteorological facilities
Aeronautical fixed service; aeronautical mobile service; radio navigational aids(ILS Category 1, VOR/DME, NDB & locater)
4.Lighting (approach lighting system; visual approach slope indicator; runway & taxiway lights; etc.)
5.Power supply and fuel supply facilities

* Cost 1) is for two-stage construction, and 2) for four-stage construction.

**Imp. Period:** 1978.6-1980.12

**4.FEASIBILITY AND ITS ASSUMPTIONS**

**Feasibility:** Yes

| | | | |
|---|---|---|---|
| EIRR1) | 15.00 | FIRR1) | 0.15 |
| EIRR2) | | FIRR2) | 4.13 |
| EIRR3) | | FIRR3) | 7.17 |

Conditions and Development Impacts:
Conditions:
1.Project life of 20 years; discount rate 10%
2.Traffic forecast:

| | Passengers ('000) | | Cargo ('000t) | | Aircraft Movements |
|---|---|---|---|---|---|
| | Dom. | Int'l | Dom. | Int'l | |
| 1990 | 1,004 | 355 | 15.3 | 30.3 | 62,970 |
| 2000 | 2,214 | 2,075 | 3.4 | 6.7 | 132,060 |

3.Quantifiable benefits: 1)upgraded services, 2)time saving by improved baggage handling, 3)shortened travel time by opening direct routes, 4)increased accomodation of passenger traffic demands, 5)reduced airport maintenance cost, and 6)saving in road tunnel constructin.
4.FIRRs are calculated for 3 alternatives of tariff rates and 2 alternatives of construction. FIRRs above are for the two-stage construction, with 1)for current rates, 2)for increased rates-A and 3)for increased rates-B.
Development impacts:
1.Contribution to socio-economic development of Bolivia.
2.Increased importance of the airport as a relay point of north-south international air routes.
3.Contribution to the regional development from the high-quality air cargo service to Santa Cruz State.

**5.TECHNICAL TRANSFER**
1)OJT:Study tour of NTIA, TIA, Tokyo ATC Center, etc, 2)Local consultants' participation:Geological Survey, boring tests, material tests, part of road design 3)Others:Participation in JICA's Aerodrome Seminar 4)All the four counterpart officials at the time have moved out to the private

## III. PRESENT STATUS OF STUDIED PROJECT

**1.PRESENT STATUS**

- [■] Completed or in Progress
  - (●) Completed
  - ( ) Partially Completed
  - ( ) Implementing
  - ( ) Processing
- [ ] Promoting
- [ ] Delayed or Suspended
- [ ] Discontinued or Cancelled

(Description)
Feb.1978 D/D completed
May 1979 OECF loan agreement (10,800 million yen)
Mar.1983 OECF loan agreement (6,689 million yen)
Jul.1984 Operation started

- There are about 11 to 12 daily flights leaving from and arriving at the airport, which is equivalent to El Alto Airport of the Capital.
- The Passenger Terminal building has not been well maintained. Cleaning service is not well performed.
- The cost of maintainance and personnel are covered by airport charges.
- The problem at this airport is the need of changing the Precision Approach Pass Indication (PAPI). However, the improvement has so far been postponed, because the improvement of La Paz Airpot has the current priority.

(FY1991 Overseas Survey)
The original design of the airport has turned out to have some problems: the terminal for cargos as well as aprons are too narrow; the parking area is too large having an average occupancy rate of only 30% (owing to the fact that Lima Airport has still been the principal airport despite the expectation that Viru Viru would substitute it)

*Contents of OECF Loan
(1) Contents
1.Airfield facilities(Runway 3,500mX45m, taxiway, apron).
2.Passanger terminal building(18,000sqm) and other facilities.
3.Navaid facilities, lighting facilities and Power supply fasilities.
4.Fuel supply facilities, urban facilities(water supply, drainage etc).

(FY1994 Domestic Survey)
The government has a plan to modernize all air navigational facilities at its major four (4) airports, namely, ViruViru/Santa Cruz, La Paz, Cochabamba and Tarija.
Under the plan, Wilcox of USA will install Instrument Landing System(ILS) equipment for difficult site, and aeronautical telecommunications facilities will be upgraded by Spanish assistance.

**2.MAJOR REASONS FOR PRESENT STATUS**
1)Relative advantage over the neighbouring countries in cargo handling capability provided by the international-standard airport; 2)Improvement was urgently needed because of the operational restrictions at the international airport of La Paz; 3)Joint Committee for the development was established with the strong support of Santa Cruz Development Authority; 4)In competing with La Paz, citizens of Santa Cruz desired establishment of the high-level international airport.

**3.PRINCIPAL SOURCE OF INFORMATION**
①, ②, ④

和名 ビルビル国際空港計画



{F/S,D/D}

# PROJECT SUMMARY (Basic Study)

Compiled Mar.1990
Revised Mar.1996

CSA BOL/S 501/78

## I. OUTLINE OF STUDY

1.COUNTRY: Bolivia

2.NAME OF STUDY: Topographic Mapping Project for Chapare Area

3.SECTOR: Social Infrastructu/Survey & Mapping

4.REFERENCE NO.:

5.TYPE OF STUDY: Basic Study

6.COUNTERPART AGENCY: Instituto Geographico Militar

7.OBJECTIVES OF STUDY: To prepare basic information for development planning

8.DATE OF S/W: 1974/6

9.CONSULTANT(S): International Engineering Consultants Association

10.STUDY TEAM
No.of Members 55
Period May.1975-Mar.1978(35 months)

| Total M/M | Japan | Field |
|---|---|---|

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:

12.EXPENDITURE
Total 565,818 (¥'000)
Contracted

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Chapare Area(20,000 sq.m)

2.PROJECT COST (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | | | |
| 2) | | | |

3.CONTENTS OF MAJOR PROJECT(S)
National base map (scale: 1/50,000; 44 plates)

4.CONDITIONS AND DEVELOPMENT IMPACTS
Maps are expected to serve as a base for development planning

5.TECHNICAL TRANSFER
OJT on aerophoto mapping techniques

## III. PRESENT STATUS OF STUDY RESULTS

1.PRESENT STATUS
■ In Progress or In Use
☐ Delayed
☐ Discontinued

(Description)

(FY1991 Overseas Survey)
Maps have been served as a basis to construct new roads in Chapare Area.
Equipments provided by the Japanese government have been well utilized even after more than ten years.
The IGM desires Japanese assistance for another topographic mapping project in the Northern La Paz area.

(FY1994 Domestic Survey)(FY1995 Domestic Survey)
No additional information.

(FY1995 Overseas Survey)
The results and performances of this study are utilized for :-
Planning the route of trunk roads,
Agricultural derelopment plan,
Development plan of new coca farms, and
Provision of the land ledger of coca farms.

2.MAJOR REASONS FOR PRESENT STATUS:

3.PRINCIPAL SOURCE OF INFORMATION
①、②

和名 チャパレー地区地図作成事業

{M/P,Basic Study,Other}

# PROJECT SUMMARY (Basic Study)

Compiled Mar.1991
Revised Mar.1996

CSA BOL/A 501/79

## I. OUTLINE OF STUDY

**1.COUNTRY** Bolivia

**2.NAME OF STUDY**
Land Use Mapping Project for Chapare Area

**3.SECTOR**
Agriculture/(Agriculture in)General

**4.REFERENCE NO.**

**5.TYPE OF STUDY** Basic Study

**6.COUNTERPART AGENCY**
Department of Farmers, Agriculture and Animal Husbandry

**7.OBJECTIVES OF STUDY**
Evaluation and suggestion of Land Use mapping for Chapare Area (2 million ha) managed by Government of Bolivia.

**8.DATE OF S/W** /

**9.CONSULTANT(S)**
Agricultural Development Consultants Association
Nippon Koei Co., Ltd.
Sanyu Consultants Inc.

**10.STUDY TEAM**
No.of Members 9
Period Feb.1980-Mar.1980(2 months)

| Total M/M | Japan | Field |
|---|---|---|
| 8.43 | 3.83 | 4.60 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
None

**12.EXPENDITURE**

| | |
|---|---|
| Total | 46,720 (¥'000) |
| Contracted | 33,686 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
Chapare District and surrounding regions in Cochabamba Province

**2.PROJECT COST**

| (US$1,000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | | | |
| 2) | | | |

**3.CONTENTS OF MAJOR PROJECT(S)**
We visited the project site to conduct basic data study necessary drawing a land use map in Chapare District. However a part of it has already completed in governmental sector, therefore we changed the objective of the study to giving technical comment and the evaluation of its results by the advice of Japanese embassy.
Main contents of the advices, as a result of field investigation and examination of materials, are:
1.To improve road infrastructure
2.To take consideration into improvement of farm land including preventing soil erosion.
3.To establish and manage distribution and process system of farm products
4.To investigate the possibility to produce Kenaf (ambari hemp) coconut palm and sago palm.
5.To put more importance on beef cattle than on milch cows.

**4.CONDITIONS AND DEVELOPMENT IMPACTS**
Technical evaluation and advice are carried out for a oblique division map, a river system map, a geological map, a agronomical map, a botanical map, a land use map and a forest map.
These maps were being made by Government of Bolivia, based on the topographical map that had been made in cooperation with Japan.

**5.TECHNICAL TRANSFER**

## III. PRESENT STATUS OF STUDY RESULTS

**1.PRESENT STATUS**
- ☑ In Progress or In Use
- ☐ Delayed
- ☐ Discontinued

(Description)
(FY1995 Domestic Survey)
On March, 1980, when the SW Mission and the Survey Team visited Bolivia simultaneously and commence the practical discussion with Bolivian side, it was disclosed that the project was already being carried on by the Government of Bolivia. Therefore, the Mission and the Survey Team quitted the planned survey works and made an evaluation and some of advice for the implementation of the project, and left back to Japan following to the instructions given by JICA's Headquarter.

(FY1995 Overseas Survey)
The results and performances of this study are utilized for:-
- to grant the state qualification for engineers,
- to grant the right to utilize the forest for private firms and to settle the rate of commission, and
- to settle the preventive measures for the transportation within the region.

The maps and the various tecnological data are utilized at various schools and enterprises.

**2.MAJOR REASONS FOR PRESENT STATUS**

**3.PRINCIPAL SOURCE OF INFORMATION**
①、②

和名 チャパレー地区土地利用図作成

{M/P,Basic Study,Other}

# PROJECT SUMMARY (F/S)

Compiled Mar.1986
Revised Mar.1996

CSA BOL/S 303/82

## I. OUTLINE OF STUDY

1.COUNTRY: Bolivia

2.NAME OF STUDY: National Telecommunication Network Project

3.SECTOR: Communications & B/Telecommunication

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY: ENTEL

7.OBJECTIVES OF STUDY: Telecommunications network improvement and expansion in medium and small cities mainly in the southwestern region of Bolivia

8.DATE OF S/W: 1981/7

9.CONSULTANT(S): Nippon Telecommunication Consulting Co., Ltd.

10.STUDY TEAM

No.of Members 14

Period Jan.1982-Sep.1982(8 months)

| Total M/M | Japan | Field |
|---|---|---|
| 27.00 | 15.17 | 11.83 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:

12.EXPENDITURE

| | |
|---|---|
| Total | 81,766 (¥'000) |
| Contracted | 49,194 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Whole country

2.PROJECT COST (US$1,000) (US$1=24.5pesos=220yen)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 51,196 | 15,556 | 35,640 |
| 2) | | | |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

1)Construction of microwave network system;
-Microwave system: 21 sections
-UHF system: 19 sections
-VHF system: 69 sections
2)Establishment of toll public telephone facilities in remote area;
-Toll public telephone facilities: 59
3)Construction of local telephone offices and outside plants;
-Total number of line units: 13,900
4)Expansion of the long distance subscriber toll dialing network:
The analog system will be adopted. Existing automated switching system will be converted to the manual non-delay service switching system.
5)Set up the long distance toll public telephones:
The service be automated by settling the VHF circuits. Charging work and line status supervision will be entrusted to each toll public telephone offices.
6)Establishment of the telephone offices in the medium sized cities:
The degital electronic switching system(expandable upto 4,000 terminals).

Imp. Period: 1983. -1986.

4.FEASIBILITY AND ITS ASSUMPTIONS: Feasibility: Yes

| | | | |
|---|---|---|---|
| EIRR1) | 9.87 | FIRR1) | 7.65 |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:
By the implementation of this project, the subscriber truck dialling system will become available for mutual connections among seven major cities of Bolivia and among 12 medium and small local cities in the southwestern region of the country. At the same time, the telecommunications network in remote areas in the southwestern region will be remarkably improved.

5.TECHNICAL TRANSFER
1) Trainee acceptance: 2 counterparts invited to Japan
2) On the job training(ENTEL counterparts)

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS
- [ ] Completed or in Progress
  - ○ Completed
  - ○ Partially Completed
  - ○ Implementing
  - ○ Processing
- [ ] Promoting
- [ ] Delayed or Suspended
- [■] Discontinued or Cancelled

(Description)
The Government of Bolivia requested for a yen credit on March 1988. Because of the deterioration of the economic conditions, the OECF loan was approved for structural adjustment, and the project implementation was postponed.

(FY1991 Overseas Survey)
The technologies suggested by the study became somewhat outdated during the postponement, and the proposals of the study were dropped.

(FY1994 Domestic Survey)
No information.

2.MAJOR REASONS FOR PRESENT STATUS
- Extreme inflation of the economy
- Proposed technologies became outdated during the postponement.

3.PRINCIPAL SOURCE OF INFORMATION
①, ②

和名 電気通信網整備拡充計画



{F/S,D/D}

# PROJECT SUMMARY (F/S)

Compiled Mar.1990
Revised Mar.1996

CSA BOL/S 302/82

## I. OUTLINE OF STUDY

1.COUNTRY: Bolivia

2.NAME OF STUDY:
Railway Construction/Rehabilitation Project(Eastern Line: Taperas-Robore and Ipias-Robore)

3.SECTOR:
Transportation/Railway

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY:
Bolivian National Railways(ENFE)

7.OBJECTIVES OF STUDY:
F/S for the rehabilitation of the Eastern and Western Lines and preparation of a detailed rehabilitation plan for the section between El Porton and Robore on the Eastern Line

8.DATE OF S/W: 1979/4

9.CONSULTANT(S):
Japan Railway Technical Service

10.STUDY TEAM

No.of Members 103

Period Jun.1979-Mar.1982(21 months)

| Total M/M | Japan | Field |
|---|---|---|
| 201.47 | 129.93 | 71.54 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:

12.EXPENDITURE

| | |
|---|---|
| Total | 415,881 (¥'000) |
| Contracted | 405,849 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA:
Between Taperas and Robore, and between Ipias and Robore on the Eastern Line

2.PROJECT COST

| (US$1,000) (US$1=19.99 pesos) | | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|---|
| | 1) | 33,865 | 11,883 | 21,982 |
| | 2) | 32,714 | 10,905 | 21,809 |
| | 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

| | |
|---|---|
| Earthwork (cutting, embarking) | 345,000cu.m |
| Bridges 9 places | 325m |
| Culverts 7 places | |
| Tracks (provisional and main tracks) | 11.7km |

Imp. Period: 1985.12-1988.2

4.FEASIBILITY AND ITS ASSUMPTIONS

Feasibility: Yes

| | | | |
|---|---|---|---|
| EIRR1) | 26.10 | FIRR1) | 9.20 |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:
- The FIRR is 10.27 when based on the face revenue decrease estimated for the without case and the necessary rehabilitation cost.
- This project would contribute to the reduction in expenses rather than an increase in revenues.
- It would also contribute towards the stabilization of surface transport to and from Brazil.

5.TECHNICAL TRANSFER:
1)Training in civil engineering for counterpart personnel
2)Utilization of a local consultant for construction work

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS:
- [■] Completed or in Progress
  - (●) Completed
  - ( ) Partially Completed
  - ( ) Implementing
  - ( ) Processing
- [ ] Promoting
- [ ] Delayed or Suspended
- [ ] Discontinued or Cancelled

(Description)

| | |
|---|---|
| March 1980 | Application for a yen credit |
| February 1982 | Completion of F/S |
| August 1982 | E/N on yen loan |
| March 1983 | Signing of L/A |
| May 1984 | Completion of D/D |
| September 1985 | Conclusion of contract and start of construction |
| February 1988 | Completion of construction and start of operation |

(FY1991 Overseas Survey)
The rehabilitation of the national railway ensured the safe and reliable transportation of agricultural products, and the farmers living along the railway line have been increasing agricultural production.
With the remaining balance of the loan (150 million yen), the replacement of the used rails with new rails is now on-going.

*Contents of OECF Loan
(1)Contents
Civil works Main Constructions(9 bridges, 6 Culverts and other), Rails and Spair parts.
(2)Loan target
Civil works, Main Constructions, Some of Consultant expenses.

(FY1994 Domestic Survey)
The construction works has been completed in Mar.1989. Rails and spare parts have been purchased and delivered to the sites in 1993. The rail laying works has been implementing since Sep.1994 and lasting in Dec.1994. The improved sections are in actual use without any problem. However, there are still many defective structures and inferior roadbed portions on other sections, and capacities of these sections are not being sufficiently utilized. To cope with this situation, OECF conducted SAPS survey and is now in the midst of monitoring.

2.MAJOR REASONS FOR PRESENT STATUS:
High priority was put on this project, since there are no modes of surface transport other than the railway.

3.PRINCIPAL SOURCE OF INFORMATION:
①、②、④

和名 国鉄復旧計画

{F/S,D/D}

# PROJECT SUMMARY (M/P+F/S)

Compiled Mar.1990
Revised Mar.1996

CSA BOL/S 201B/87

## I. OUTLINE OF STUDY

1.COUNTRY: Bolivia

2.NAME OF STUDY
El Alto Airport Modernization Project

3.SECTOR
Transportation/Air Transportation & Airport

4.REFERENCE NO.

5.TYPE OF STUDY: M/P+F/S

6.COUNTERPART AGENCY
Administración de Aeropuertos y Servicios Auxiliares a la Navigación Aérea

7.OBJECTIVES OF STUDY
Improvement of airport facilities

8.DATE OF S/W: 1986/8

9.CONSULTANT(S)
Pacific Consultants International

10.STUDY TEAM

No.of Members 8

Period Jan.1987-Feb.1988(14 months)

| Total M/M | Japan | Field |
|---|---|---|
| 37.43 | 16.99 | 20.44 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY
Topographic and Geological Survey, Sample Analysis

12.EXPENDITURE

| | |
|---|---|
| Total | 151,820 (¥'000) |
| Contracted | 133,737 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA
El Alto Airport, La Paz

2.PROJECT COST

| | | Local Cost | Foreign Cost | |
|---|---|---|---|---|
| (US$1,000) (US$1=150Yen) | M/P 1) | | | |
| | 2) | | | |
| | F/S 1) | 138,000 | 26,000 | 112,000 |
| | 2) | | | |
| | 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)
<M/P>Development Phases of Airport Master Plan:1.Immediate Improvement Work(1988 -1993) : Total project cost US$679,000
1)Improvement of runway pavement and construction of runway shoulders and blast pads 2)Renovation of the existing passenger terminal building 2.Phase 1 development Project(1994 -1997) : Total project cost US$138,000,000 1)Pavement overlay of the existing runwa 2)Construction of taxiways, aprons, roads and a car park, a new passenger terminal building, a new cargo building, a new administration building and control tower 3)Improvement of air navigation systems
3.Phase 2 Development Project(1998 -2005)(Total project cost US$53,000,000) 1)Pavement overlay of the existing runway; 2)Expansion of aprons; 3)Expansion of car park, passenger terminal building and cargo terminal building; 4)Replacement of air navigation systems
<F/S> Major First Stage Construction Works: a)Pavement overlay of the existing runway 4,000m x 46m, 14cm thick b)Construction of taxiways 4,000m x 23m c)Passenger terminal apron (324.5m x 131m) d)Freight terminal apron (97.5m x 131m) e)Construction of roads and a car park 1 lump sum f)Passenger terminal building (total floor area 16,500 sq.m) g)Freight terminal building(total floor area 5,000 sq.m) h)Administration buildings and control tower(Total floor area 4,000 sq.m) i)Improvement of air navigation systems 1 lump sum j)Other related facilities

Imp. Period: 1991.7-1993.12

4.FEASIBILITY AND ITS ASSUMPTIONS — Feasibility: Yes

| | | | |
|---|---|---|---|
| EIRR1) | 18.20 | FIRR1) | 4.00 |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:

Conditions:<M/P>

| Year | Air Traffic Demand 1985 | 1997 | 2005 |
|---|---|---|---|
| Annual Passengers | | | |
| Domestic | 413,000 | 1,030,000 | 1,700,000 |
| International | 133,000 | 280,000 | 440,000 |
| Annual Cargo Volume (ton) | | | |
| Domestic | 6,700 | 15,400 | 26,900 |
| International | 5,800 | 15,600 | 25,700 |

<F/S> Project life of 25 years after completion of the construction
<Impacts><M/P,F/S> Safety and efficiency of air transportation will be promoted by improvement and expansion of existing old and small capacity facilities. This will increase trade and business opportunity, expand employment,and attract foreign tourists contributing to the growth of the national economy of Bolivia. B/C Ratio 1.7<F/S> (at discount rate of 12%)

5.TECHNICAL TRANSFER
1)Seminar on computer analysis, economic/financial analysis & evaluation of aircraft noise; 2)Training in Japan; 3)Use of local consultants for geological investigation & survey; and 4)Guidance on aircraft noise measurement

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS
- [■] Completed or in Progress
- [ ] Promoting
- ○ Completed
- ○ Partially Completed
- [ ] Delayed or Suspended
- ● Implementing
- ○ Processing
- [ ] Discontinued or Cancelled

(Description)
1989.5 requested OECF loan (US$3.4 million)
The government is waiting for a favorable response from the OECF.

(FY1991 Overseas Survey)
The original estimate of $14.9 mil. for the total cost assuming the complete reconstruction of the airport was discarded (too costly relative to the Viru Viru Airpot) and was reduced to $4.95 million for an alternative project design.
(FY1992 Overseas Survey)
- The Project has been reviewed.
  Total Cost $US 65,306,650
  Local Cost $US 20,906,650
  Foreign Cost $US 44,400,000
- The government of Bolivia requested Japanese Grant for 1996.

Conditions:
<M/P>

| Year | Air Traffic Demand 1985 | 1997 | 2005 |
|---|---|---|---|
| Annual Passengers | | | |
| Domestic | 413,000 | 1,030,000 | 1,700,000 |
| International | 133,000 | 280,000 | 440,000 |
| Annual Cargo Volume (ton) | | | |
| Domestic | 6,700 | 15,400 | 26,900 |
| International | 5,800 | 15,600 | 25,700 |

<Impacts><M/P,F/S>
Safety and efficiency of air transportation will be promoted by improvement and expansion of existing old and small capacity facilities. This will increase trade and business opportunity, expand employment, and attract foreign tourists, contributing to the growth of the national economy of Bolivia.

(FY1993 Overseas Survey)
The policy for the development of Airport is setteled in order to implement according to the plan based on the survey results, and to keep the present situations of each existing areas as well as possible.
Only for a part of extension, the financing has been approved by JICA. Some part of the fund will be by Grant Aid Basis, and remainder will be started necessary procedures to realize on 1996.

(FY1994 Domestic Survey)
Upon the safety operation of airplanes, the Government of Japan has extended a grant aid assistance for the Project for Modernization of El Alto International Airport which included rehabilitation of the air navigation equipment, construction of an air traffic control tower, equipment building, turning pad and runway blast pad.

2.MAJOR REASONS FOR PRESENT STATUS
<M/P> High priority is placed in the national development plan as important and urgent.
<F/S>Lack of external funds.

3.PRINCIPAL SOURCE OF INFORMATION
①, ② Administracion de Aeropuertos y Servicios

和名 エル・アルト空港近代化計画

Continued on (M/P+F/S)

# 状況（要約表添付文書）

CSA BOL/S 201B/87 (M/P+F/S)

Name of Study: El Alto Airport Modernization Project

Country: Bolivia

Type of Study: M/P+F/S

Sector: Transportation/Air Transportaion & Airport

Present Status: Implementing

(Description)

1989.5 requested OECF loan (US$3.4 million)
The government is waiting for a favorable response from the OECF.

(FY1991 Overseas Survey)
The original estimate of $14.9 mil. for the total cost assuming the complete reconstruction of the airport was discarded (too costly relative to the Viru Viru Airpot) and was reduced to $4.95 million for an alternative project design.

(FY1992 Overseas Survey)
- The Project has been reviewed.
  Total Cost $US 65,306,650
  Local Cost $US 20,906,650
  Foreign Cost $US 44,400,000
- The government of Bolivia requested Japanese Grant for 1996.

Conditions:
<M/P>

| Air Traffic Demand | | | |
|---|---|---|---|
| Year | 1985 | 1997 | 2005 |
| Annual Passengers | | | |
| Domestic | 413,000 | 1,030,000 | 1,700,000 |
| International | 133,000 | 280,000 | 440,000 |
| Annual Cargo Volume (ton) | | | |
| Domestic | 6,700 | 15,400 | 26,900 |
| International | 5,800 | 15,600 | 25,700 |

<Impacts><M/P,F/S>
Safety and efficiency of air transportation will be promoted by improvement and expansion of existing old and small capacity facilities. This will increase trade and business opportunity, expand employment, and attract foreign tourists, contributing to the growth of the national economy of Bolivia.

(FY1993 Overseas Survey)
The policy for the development of Airport is setteled in order to implement according to the plan based on the survey results, and to keep the present situations of each existing areas as well as possible.
Only for a part of extension, the financing has been approved by JICA. Some part of the fund will be by Grant Aid Basis, and remainder will be started necessary procedures to realize on 1996.

(FY1994 Domestic Survey)
Upon the safety operation of airplanes, the Government of Japan has extended a grant aid assistance for the Project for Modernization of El Alto International Airport which included rehabilitation of the air navigation equipment, construction of an air traffic control tower, equipment building, turning pad and runway blast pad.
The basic design and detailed design for the Project was completed by June 1994. And the Exchange of Note for the construction signed on the day of 20th September 1994.

(FY1995 Domestic Survey)
No additional information.

(FY1995 Overseas Survey)
Under the construction since March, 1995, and expected to complete on January, 1997.

# PROJECT SUMMARY (F/S)

Compiled Mar.1992
Revised Mar.1996

CSA BOL/S 305/87

## I. OUTLINE OF STUDY

**1.COUNTRY** Bolivia

**2.NAME OF STUDY**
Groundwater Development Project on El Alto District in La Paz City

**3.SECTOR**
Public Utilities/Water Supply

**4.REFERENCE NO.**

**5.TYPE OF STUDY** F/S

**6.COUNTERPART AGENCY**
Servicio Autonomo Municipal de Agua Potable y Alcantarillada (SAMAPA)

**7.OBJECTIVES OF STUDY**
Water supply for El Alto District, utilizing underground water

**8.DATE OF S/W** 1986/10

**9.CONSULTANT(S)**
Kyowa Engineering Consultants Co., Ltd.

**10.STUDY TEAM**

No.of Members 6

Period Jan.1987-Jan.1988(13 months)

| Total M/M | Japan | Field |
|---|---|---|
| 22.00 | 8.00 | 14.00 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
- Geological survey
- Electrical prospecting
- Groundwater level survey

**12.EXPENDITURE**

| | |
|---|---|
| Total | 94,738 (¥000) |
| Contracted | 65,213 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
El Alto District, excluding the airport area (71.5 sq.km)
(The District was upgraded to El Alto City during the present study)

**2.PROJECT COST**
(US$1,000)
US$1=123.5 yen

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 14,575 | 11,952 | 2,623 |
| 2) | 8,907 | 7,126 | 1,781 |
| 3) | | | |

**3.CONTENTS OF MAJOR PROJECT(S)**

1.Potentials of groundwater development
- Southeastern side of Rio Seco (12km, intake of 30,000 cu.m/day
- Northwestern side (10km, intake of 20,000 cu.m/day)

2.Major facilities 1) by 1995 2) by 2000
- Water intake wells:

| | | |
|---|---|---|
| 42 cu.m/h x 155m x 3000 x 37km | 6 sets | - |
| 42 cu.m/h x 120m x 3000 x 30km | 6 sets | 2 sets |
| 42 cu.m/h x 95m x 3000 x 22km | 12 sets | 12 sets |
| 42 cu.m/h x 72m x 3000 x 15km | 6 sets | 6 sets |

- Water conveyance facilities (Main pipeline 58km)
- A junction well, a puping well and related facilities

* Costs shown above pertain to water intake facilities only.

Imp. Period: 1990. -1995. 1995. -2000.

**4.FEASIBILITY AND ITS ASSUMPTIONS**
Feasibility: Yes/No

| | |
|---|---|
| EIRR1) | FIRR1) |
| EIRR2) | FIRR2) |
| EIRR3) | FIRR3) |

**Conditions and Development Impacts:**

Conditions:
- Water supply target for 1995: 26,700 cu.m/day (pop. estimate of 385,000 and demand of 155 liters/man/day)
- Water supply target for 2000: 46,200 cu.m/day (pop.estimate of 495,000 and demand of 160 liters/man/day)

Impacts:
Because of the rapid population increase in La Paz City (pop.one million), the supply of urban services, especially of drinking water, falls short of the growing demand. El Alto District, a newly expanding area of the La Paz metropolitan area, has been receiving large inflows of former mine workers, and it is extremely important to secure stable sources of water supply. The existing purification plant (water intake from Lake Tuni) does not have the capacity, and it is urgently needed to develop groundwater resources.

**5.TECHNICAL TRANSFER**

## III. PRESENT STATUS OF STUDIED PROJECT

**1.PRESENT STATUS**
- ■ Completed or in Progress
  - ● Completed
  - ○ Partially Completed
  - ○ Implementing
  - ○ Processing
- □ Promoting
- □ Delayed or Suspended
- □ Discontinued or Cancelled

**(Description)**

On the basis of the study, a basic design study was subsequently undertaken, financed by the Japanese grant aid program.

Oct. 1988 E/N for Japanese General Grant Aid (1,693 million yen)
Phase I construction: 16 intake wells, conveyance pipelines 27.6km, 5 pumps, 1 distribution pond, distribution pipes 9.35km, etc.

Jun. 1989 E/N for Japanese General Grant Aid (691 million yen)
Phase 2 construction: 14 intake wells, conveyance pipelines 11.2km, distribution pipes 9.6km, etc.

The SAMAPA is currently extending the pipeline for water supply with its own budget. The existing facilities can supply 5,000 cu.m per day, relative to the planned target of 30,000 cu.m for the year 2009.

(FY1994 Domestic Survey)
Now-a-days, SAMAPA is continuing the construction works of water service pipelines by its own budget, and the number of population served and the required amount of water supply are gradually increasing. The planned water supply amount in 2009, the year of target, is 30,000 cubic meter a day, compared with 5,800 in 1994.
However, at present, actual supply amount is only about 3,000 cibic meter a day, equivalent to only 50 per cent of planned figure and it seems to be very hard to improve.
As the result of the operation of this facility, the stringent situation of the water suppliment for the City of El Alto has been rather mitigated. But, it would be still necessary to improve furthermore by means of extension of service pipelines to increase the water supply amount and to dessolve the non-service area in the City.
On the other hand, the Cities of La Paz and El Alto, which are with SAMAPA's service, are still suffering the serious water shortage due to the delay of development of the water resources, except this project area.
Therefore, it is considered that it may be about the time to establish supporting water supply facilities in the other areas, which has been recommended by the F/S, in order to increase the water supply amount.

**2.MAJOR REASONS FOR PRESENT STATUS**
The early implementation was expected to contribute greatly to the realization of social stability, one of the primary national objectives.

**3.PRINCIPAL SOURCE OF INFORMATION**
①、②

和名 ラパス市エル・アルト地区地下水開発計画

{F/S,D/D}

# PROJECT SUMMARY (F/S)

Compiled Mar.1990
Revised Mar.1996

CSA BOL/S 304/87

## I. OUTLINE OF STUDY

1.COUNTRY: Bolivia

2.NAME OF STUDY: Mejoramiento de la carretera entre San Borja y Trinidad

3.SECTOR: Transportation/Road

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY: Servicio Nacional de Caminos

7.OBJECTIVES OF STUDY: Technical survey, preliminary design and evaluation of socio-economic impacts

8.DATE OF S/W: 1985/8

9.CONSULTANT(S): Central Consultant, Inc.
CTI Engineering Co., Ltd.

10.STUDY TEAM

No.of Members

Period Nov.1985-Jul.1987(21 months)

| Total M/M | Japan | Field |
|---|---|---|
| 72.45 | 25.26 | 47.19 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY: Environmental Survey

12.EXPENDITURE

Total: 458,528 (¥'000)

Contracted:

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Road between San Borja and Trinidad

2.PROJECT COST (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 64,000 | 25,145 | 38,852 |
| 2) | 65,300 | 24,489 | 40,826 |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

1)First Phase
1)Embankment over 222 km, related structures, preparation of pavement sub base, etc.
2)Asphalt pavement between San Borja and Puerto Barrador
3)A ferry terminal

2)Second Phase
Asphalt pavement over 212 km from San Borja to Puerto Ganadero

Imp. Period: 1989. -1991. 1994. -1995.

4.FEASIBILITY AND ITS ASSUMPTIONS — Feasibility: Yes/No

| | |
|---|---|
| EIRR1) | FIRR1) |
| EIRR2) | FIRR2) |
| EIRR3) | FIRR3) |

Conditions and Development Impacts:
Economic evaluation was done during the D/D study (See next page).

5.TECHNICAL TRANSFER: Surveying technique·road construction and supersttructure design technique were transfered.

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- ■ Completed or in Progress
- ○ Completed
- ◐ Partially Completed
- ○ Implementing
- ○ Processing
- □ Promoting
- □ Delayed or Suspended
- □ Discontinued or Cancelled

(Description)

Jan.1989 D/D completed by Central Consultant
Dec.1989 Requested Inter-American Development Bank (IDB) financing (road construction)

IDB has long been financing the improvement of Route 3 which includes the San Borja-Trinidad section. The IDB-financed construction of the Cotapata-Santa Barbara section is scheduled to begin in 1991, and the implementation of the San Borja-Trinidad section is expected to start after this project.
IDB requires environmental impact assessment as a condition for its loan approval.

(FY1991 Overseas Survey)
According to SENAC, the construction is being planned to start sometime during 1995-1998.
The cost is estimated to be US$89 million, of which 80% (US$57 million) will be obtained from IDB and 20% from the government funds.
The construction will follow the results of F/S and D/D by JICA.

(FY1993 Overseas Survey)
The project has been given the top priority among various national projects.
Construction works of two bridges are commenced with an amount of $964 mil of state budget. Five bridges has been completed the construction works recently and another one bridge is now expanding its width.
Another three sections with a total destance of 156km along Route 3 has been constructed.

(FY1994 Domestic Survey)
No additional information.

(FY1995 Domestic Survey)
At present, the final report of the survey works of environmental effects is being compiled by JICA.

(FY1995 Overseas Survey)
The JICA's survey works for environmental effects, started from 1994, were completed on August, 1995 and now on the stage to check and revise the final report. And based on the results of JICA's design, 5 bridges were constructed. It is going to construct additional 10 bridges and the colgate pipes for sewage which were requested by municipalities.

2.MAJOR REASONS FOR PRESENT STATUS

3.PRINCIPAL SOURCE OF INFORMATION

①, ② Servicio Nacional de Caminos

和名 サンボルハートリニダ道路改良

{F/S,D/D}

# PROJECT SUMMARY (D/D)

Compiled Mar.1990
Revised Mar.1996

CSA BOL/S 401/88

## I. OUTLINE OF STUDY

1.COUNTRY: Bolivia

2.NAME OF STUDY: Mejoramiento de la carretera entre San Borja y Trinidad

3.SECTOR: Transportation/Road

4.REFERENCE NO.:

5.TYPE OF STUDY: D/D

6.COUNTERPART AGENCY: Servicio Nacional de Caminos

7.OBJECTIVES OF STUDY: Basic design

8.DATE OF S/W: 1987/7

9.CONSULTANT(S): Central Consultant, Inc.

10.STUDY TEAM

No.of Members 7

Period Sep.1987-Jan.1989(16 months)

| Total M/M | Japan | Field |
|---|---|---|
| 46.54 | 14.57 | 31.97 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY: Measurement and geological survey

12.EXPENDITURE

| | |
|---|---|
| Total | 245,542 (¥'000) |
| Contracted | 232,720 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Road between San Borja and Trinidad

2.PROJECT COST (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 61,771 | 24,649 | 37,122 |
| 2) | | | |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

First Phase Construction:
- Road improvement
- bridge construction

(total length after improvement 229 km (including the ferry-serviced 7 km), 9 bridges)

Imp. Period: 1990. -1993.

4.FEASIBILITY AND ITS ASSUMPTIONS

Feasibility: Yes

| | | |
|---|---|---|
| EIRR1) | 24.76 | FIRR1) |
| EIRR2) | | FIRR2) |
| EIRR3) | | FIRR3) |

Conditions and Development Impacts:

Development Impacts:

1)The project will complete the connection between La Paz and Santa Cruz, providing the large-scale ring road connecting the country's major cities.

2)The project will provide all-weather road in the section where travel is not possible during the rainy season, and stimulate the development of the surrounding hinterland.

3)Transportation of goods between the project area and La Paz are done by air, but the proposed road will improve surface transportation means and reduce transport costs.

5.TECHNICAL TRANSFER: OJT on computerized efficient designing, hydrologic analysis, and drainage technology.

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- [■] Completed or in Progress
  - ○ Completed
  - ● Partially Completed
  - ○ Implementing
  - ○ Processing
- [ ] Promoting
- [ ] Delayed or Suspended
- [ ] Discontinued or Cancelled

(Description)

Dec.1989 Requested the Inter-American Development Bank (IDB) financing.

Note: The IDB has long been financing the improvement of Route 3 which includes the San Borja-Trinidad section. The IDB-financed construction of the Cotapata-Santa Barbara section is scheduled to begin in 1991, and the implementation of the San Borja-Trinidad section is expected to start after this project.

The IDB requires an environmental effect assessment as a condition for its loan approval.

(FY1991 Overseas Survey)

It is not certain yet when the construction begins; according to SENAC, it is supposed to start between 1995 and 1998.

The total project cost is US $89mil., out of which $57mil.(80%) will be financed by the IDB and the rest $32mil.(20%) by the Bolivian government. The project will be implemented according to the F/S and D/D, and no change in design is expected.

SENAC regards the policy of the IDB as having changed so that it will provide no further assistance in road construction.

(FY1992 Overseas Survey)

1993 L/A Signed (IDB $US 3.5 million) for the Ecological Economic Land Use Study Project.
The L/A was ratified at the national congress in February 1993.

(FY1993 Overseas Survey)

The project has been given the top priority among various national projects.

Construction works of two bridges are commenced with an amount of $964 mil of state budget. Five bridges has been completed the construction works recently and another one bridge is now expanding its width.

Another three sections with a total distance of 156km along Route 3 has been constructed.

(FY1994 Domestic Survey)

In 1994, JICA carried out the environmental effect assessment study and complete the final report of it in Jul.1995.

(FY1995 Domestic Survey)

At present, the final report of the survey works of environmental effects is being compiled.

(FY1995 Overseas Survey)

2.MAJOR REASONS FOR PRESENT STATUS

3.PRINCIPAL SOURCE OF INFORMATION

①, ② Servicio Nacional de Caminos

和名 サンボルハ～トリニダ道路改良

Continued on {F/S,D/D}

# 状況（要約表添付文書）

CSA BOL/S 401/88 (D/D)

Name of Study: Mejoramiento de la carretera entre San Borja y Trinidad

Country: Bolivia

Type of Study: D/D

Sector: Transportation/Road

Present Status: Partially Completed

(Description)

Dec.1989 Requested the Inter-American Development Bank (IDB) financing.
Note: The IDB has long been financing the improvement of Route 3 which includes the San Borja-Trinidad section. The IDB-financed construction of the Cotapata-Santa Barbara section is scheduled to begin in 1991, and the implementation of the San Borja-Trinidad section is expected to start after this project.
The IDB requires an environmental effect assessment as a condition for its loan approval.

(FY1991 Overseas Survey)
It is not certain yet when the construction begins: according to SENAC, it is supposed to start between 1995 and 1998.
The total project cost is US $89mil., out of which $57mil.(80%) will be financed by the IDB and the rest $32mil.(20%) by the Bolivian government. The project will be implemented according to the F/S and D/D, and no change in design is expected.
SENAC regards the policy of the IDB as having changed so that it will provide no further assistance in road construction.

(FY1992 Overseas Survey)
1993 L/A Signed (IDB $US 3.5 million) for the Ecological Economic Land Use Study Project.
The L/A was ratified at the national congress in February 1993.

(FY1993 Overseas Survey)
The project has been given the top priority among various national projects.
Constrution works of two bridges are commenced with an amount of $964 mil of state budget. Five bridges has been completed the construction works recently and another one bridge is now expanding its width.
Another three sections with a total distance of 156km along Route 3 has been constructed.

(FY1994 Domestic Survey)
In 1994, JICA carried out the environmental effect assessment study and complete the final report of it in Jul.1995.

(FY1995 Domestic Survey)
At present, the final report of the survey works of environmental effects is being compiled.

(FY1995 Overseas Survey)
The JICA's survey works for environmental effects, started from 1994, were completed on August, 1995 and now on the stage to check and revise the final report.
And based on the results of JICA's design, 5bridges were constructed. It is going to construct additional 10 bridges and the colgate pipes for sewage which were requested by municipalities.

# PROJECT SUMMARY (F/S)

Compiled Mar.1992
Revised Mar.1996

CSA BOL/A 301/90

## I. OUTLINE OF STUDY

1.COUNTRY: Bolivia

2.NAME OF STUDY: Agricultural and Rural Development Project in Santa Ana

3.SECTOR: Agriculture/(Agriculture in)General

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY: Regional Development Corporation of Tarija

7.OBJECTIVES OF STUDY: Formulation of irrigated agriculture and rural development plans

8.DATE OF S/W: 1988/12

9.CONSULTANT(S): Naigai Engineering Co., Ltd.

10.STUDY TEAM

No.of Members 10

Period Jul.1989-Aug.1990(13 months)

| Total M/M | Japan | Field |
|---|---|---|
| 38.29 | 11.18 | 27.11 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY: Geological Survey (Soil Test)

12.EXPENDITURE

| | |
|---|---|
| Total | 183,787 (¥'000) |
| Contracted | 132,582 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Santa Ana in Tarija Dept.

2.PROJECT COST (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 15,185 | 7,463 | 7,722 |
| 2) | | | |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

Beneficial area (irrigation); 1,090 ha

Proposed facilities;
- Water source (concrete gravity dam)
- Sedimentation dam
- Irrigation canals: Main 5.4km; Secondary 24.8km; Reservoirs 14 nos.
- Road improvement 20.2km
- Rural water supply (shallow wells) 15 nos.
- Rural electrification 20.0km
- Public health center 3 places
- Educational facilities (school houses, etc.) 2 places
- O/M equipment 3 places

Imp. Period: 1991. -1994.

4.FEASIBILITY AND ITS ASSUMPTIONS — Feasibility: Yes/No

| | | | |
|---|---|---|---|
| EIRR1) | 10.20 | FIRR1) | |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:

Conditions:
- In the agricultural development plan,the case study regarding the irrigation scale of the beneficial farmers will be made. The plan will be verified with technical and economical points of view taking the analysis of the internal rate of return and farm economy including O & M and repayment costs after completion of the project.
- Economical effects borne by the rural development scheme will be incorporated with the evaluation of the project because the scheme is the major components of the project as well as the agricultural development plan in the objective areas.
- Introduction of the perennial crops is indispensable for the stability of farm economy in the objective area. Out of 4 ha which is the average cultivation area of the farmer, perennial crop cultivation of 1 ha is proposed in the project.

Development Impacts:

| | |
|---|---|
| Increased agricultural production | 1,982,000(US$/target year) |
| Reduction of transportation cost by road improvement | 8,370(US$/target year) |
| Erosion Preventation | 3,850(US$/target year) |
| Total | 1,994,220(US$/target year) |

5.TECHNICAL TRANSFER: OJT

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- ☐ Completed or in Progress
  - ○ Completed
  - ○ Partially Completed
  - ○ Implementing
  - ○ Processing
- ■ Promoting
- ☐ Delayed or Suspended
- ☐ Discontinued or Cancelled

(Description)

(FY 1991 Overseas Survey)
CODETAR is planning to reduce the scale of the project because of the cost. CODETAR had expected grants from the Japanese government, and they did not plan to request any loans. Therefore, the project has not made any progress. In 1991, CODETAR became very passive about practicing this project because of its small effect.

(FY1992 Overseas Survey)
- CODETAR is paving the road Tarija-Santa Ana, which is the main access to the project area.
- Basic Sanitation Works were completed in Yasera Norte.
- CODETAR has the necessary domestic resources for the counterpart of the Final Project.
- The costs of the implementation and construction of the project could be reduced.
- The development projects are excuted by JICA. The training of the counter part is necessary.

(FY1993 Overseas Survey)
Since the original plan seemed to be too big, as the result of re study, the plan has been scaled down to reduce the irrigation area 700ha from 1,090ha, and the costs for project becomes less than $3 million, about a half of original plan.
Hoping to earn the grant aid from JICA, revised final design has been submitted to Japanese side.

(FY1994 Domestic Survey)
No additional information.

(FY1995 Domestic Survey)
The feasibility becomes lower. It seems to be impossible to materialize this project unless the grant aid is available.

(FY1995 Overseas Survey)
Looking for the financial resources to various international financing organizations in order to commence the implementation based on the final design.

2.MAJOR REASONS FOR PRESENT STATUS

The proposed development policy for FY91 and 92 by CODETAR has been oriented toward projects involving the linking of roads and basic sanitation of Tarija.

3.PRINCIPAL SOURCE OF INFORMATION

①、② Regional Development Corporation of Tarija

和名 サンタアナ農業農村開発計画



[F/S,D/D]

# PROJECT SUMMARY (F/S)

Compiled Mar.1992
Revised Mar.1996

CSA BOL/S 306/90

## I. OUTLINE OF STUDY

1.COUNTRY: Bolivia

2.NAME OF STUDY: Road Improvement between Santa Barbara and Bella Vista

3.SECTOR: Transportation/Road

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY: National Road Service Ministry of Transportation and Communication

7.OBJECTIVES OF STUDY: Feasibility Study on the road improvement between Santa Barbara and Bella Vista

8.DATE OF S/W: 1988/6

9.CONSULTANT(S): Central Consultant, Inc.
Nippon Koei Co., Ltd.

10.STUDY TEAM
No.of Members 16
Period Aug.1989-Mar.1991(17 months)

| Total M/M | Japan | Field |
|---|---|---|
| 67.04 | 27.81 | 39.23 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY
Aerophoto 10281000yen

12.EXPENDITURE

| | |
|---|---|
| Total | 315,634 (¥'000) |
| Contracted | 300,645 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Road Section between Santa Barbara and Bella Vista on the National Road 3

2.PROJECT COST (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 188,420 | 84,463 | 103,957 |
| 2) | | | |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)
1. Total length of the projected road: 108.63km (Current road: 115.5km)
2. Length of the widened road: 92.29km (85%)
3. Length of the rerouted road: 16.34km (15%)
4. Number of bridges: 13
5. Number of tunnels: 2
6. Pavement: asphalt and concrete pavement

Imp. Period: 1996. -2000.

4.FEASIBILITY AND ITS ASSUMPTIONS: Feasibility: Yes

| | | | |
|---|---|---|---|
| EIRR1) | 19.70 | FIRR1) | |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:
Project Benefit is as follows;
1. Running time saving
2. Waiting time saving
3. Vehicle operating cost saving
4. Accident deduction
5. Disaster prevention
6. Transportation cost deduction from refrigerated trucks
7. Development benefit

5.TECHNICAL TRANSFER: The technical transfer was confirmed in the field of road design, bridge design, tunnel design and total cost culculation.

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS
- [■] Completed or in Progress
  - ○ Completed
  - ○ Partially Completed
  - ● Implementing
  - ○ Processing
- [ ] Promoting
- [ ] Delayed or Suspended
- [ ] Discontinued or Cancelled

(Description)
On the National Road 3, except the section between Santa Barbara and Bella Vista, all other road sections have already improved or are just about to start the improvement works. Once these road sections will have improved, the road section between Santa Barbara and Bella Vista will obviously become the severe bottleneck for traffic. On the other hand, this road section is very notorious for its disaster occurrence and risky road section in Bolivia.

(FY1991 Overseas Survey)
Therefore, Bolivian government is requesting the Japanese Government and JICA to conduct a D/D on this project. Ministerio de Planeamento y Coordination ranked the project as second priority for the development projects in the fiscal 1991 from the Japanese government.

(FY1992 Overseas Survey)
1991.2 Requested Japanese government for a Technical Assistance. Up to date the Government of Japan has not yet answered officially this request. Bolivia is preparing a new request regarding this matter.
The existing road has been improved.

(FY1993 Overseas Survey)
Technical Cooperation for detail designing and survey works for environmental impacts for the road section has been requested to the Government of Japan on November,1993. After the completion of these survey works, actions for construction works will be taken.
Maintenance and repairment works for this section of the road are implementing by "Servicio Nacional de Caminos" using equipment and facilities supplied by Japan.

(FY1994 Domestic Survey)
No additional information.

(FY1995 Domestic Survey)
Implementation of D/D is mentioned at the Bolivian BID Project of the year of 1997.

(FY1995 Overseas Survey)
Maintenance and repairment works are carrying on by means of the equipment and the fund from Japan.

2.MAJOR REASONS FOR PRESENT STATUS

3.PRINCIPAL SOURCE OF INFORMATION
①, ② Servicio Nacional de Caminos

和名 サンタバルバラ・ベジャビスタ道路改良計画

{F/S,D/D}

# PROJECT SUMMARY (M/P)

Compiled Mar.1993
Revised Mar.1996

CSA BOL/A 101/91

## I. OUTLINE OF STUDY

**1.COUNTRY** Bolivia

**2.NAME OF STUDY**
Forest Resources Management

**3.SECTOR**
Forestry/Forestry & Forest Conservation

**4.REFERENCE NO.**

**5.TYPE OF STUDY** M/P

**6.COUNTERPART AGENCY**
Ministerio de Asuntos Campesinos y Agropecuarios, y Centro de Desarrollo Forestal

**7.OBJECTIVES OF STUDY**
Forest Resources Survey and Formulation of a Forest Management plan compatible with the Environment.

**8.DATE OF S/W** 1989/9

**9.CONSULTANT(S)**
Japan Forest Technical Association

**10.STUDY TEAM**
No.of Members 15
Period Feb.1990-Mar.1992(13 months)

| Total M/M | Japan | Field |
|---|---|---|
| 92.94 | 48.56 | 44.38 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
Aerial Photography; Wild Fauna Survey
Vegetation Survey

**12.EXPENDITURE**

| | |
|---|---|
| Total | 329,671 (¥'000) |
| Contracted | 354,168 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
Model Area of 50,000ha within a Study Area of 30,000ha in Iturralde Province, La Paz State.

**2.PROJECT COST**

| (US$1,000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | | | |
| 2) | | | |

**3.CONTENTS OF MAJOR PROJECT(S)**

The Forest Management Plan for the model area is prepared on the basis of the surveys on forest resources, soils, land use and vegetation, environmental impact assessment, and so forth.

| | Sector I (25,631ha) | Sector II (25,121ha) |
|---|---|---|
| 1. Nos. of Forest Compartments | 32 | 29 |
| 2. Area Classification | | |
| Production forests | 20,737.02ha | 18,015.10ha |
| Installations & Nurseries | 41.15ha | 45.73ha |
| Protection Areas | 4,793.55ha | 4,261.88ha |
| Others (forest roads, grazing areas, abandoned forest roads) | | |

3. Selection of 3 species(Mara, Cedro & Verdolago) and the timber exploitation plan; Selection of 2 species(Mara & Cedro) and the re-planting plan; and Plans for forest roads and timber transportation
4. Forest Protection Plan
5. Suggestions on the organization of maintenance and operation

**4.CONDITIONS AND DEVELOPMENT IMPACTS**

The Management Plan takes into account the following guidelines:
1.The Plan conforms to the National Forest Law of Bolivia.
2.The Plan aims to exploit forest resources in a sustainable manner and to protect valuable forest fauna and flora, by demarcating the areas for production and those for protection.
3. Timber exploitation is limited to high trees, and employs the selective felling method of individual trees.
4. After selective felling, the area will be re-planted with the selected tree species, in order to sustain the forest resources.
5. Protection Areas will be left to nature without human intervention.
6. Pastures will continue to be used as grazing land.
7. Concerning the protection of rare forest fauna and flora, the Plan will indicate guidelines for its planning and implementation.
8. Following the guidelines above, the Plan aims to sustain the natural forest production by enploying the selective felling and the replanting to ensure natural regeneration, and thereby to preserve the approximately natural forest ecosystem and to sustain and nurture the forest resources.

**5.TECHNICAL TRANSFER**
On the job Training, technology transfer seminor, and trainning of Bolivia personnel in Japan.

## III. PRESENT STATUS OF STUDY RESULTS

**1.PRESENT STATUS**
- ■ In Progress or In Use
- ☐ Delayed
- ☐ Discontinued

(Description)
The basic idea of this study would be applied to formulate the Master Plan and to conduct feasibility study in other area in Bolivia.

(FY1992 Overseas Surbey)
The deterioration and loss of resources are steadily increasing in the tropical zones or areas.

(FY1993 Overseas Survey)
Looking for the financial resources to conduct survey works and request the fund for Phase 2 survey to JICA.
The results of JICA's study are very useful for the establishment of new plan and the settlement of new areas for borrowing as the basic data of afforestation.
In order to implement the recommended items, further technical and financial cooperations are requested.

(FY1994 Domestic Survey)(FY1995 Domestic Survey)
No additional information.

(FY1995 Overseas Survey) No additional information.

**2.MAJOR REASONS FOR PRESENT STATUS**
Under the present circumstances, it is not necessary to implement immediately the project in this study area.

(FY1992 Overseas Surbey)
Lack of local funds.

**3.PRINCIPAL SOURCE OF INFORMATION**
①, ② Centro de Desarrollo Forestal

和名 森林資源管理肝菌

{M/P,Basic Study,Other}

# PROJECT SUMMARY (M/P)

Compiled Mar.1993
Revised Mar.1996

CSA BOL/S 101/91

## I. OUTLINE OF STUDY

1.COUNTRY: Bolivia

2.NAME OF STUDY
Modernization and Rehabilitation of Bolivian National Railways

3.SECTOR
Transportation/Railway

4.REFERENCE NO.

5.TYPE OF STUDY: M/P

6.COUNTERPART AGENCY
Bolivian National Railways

7.OBJECTIVES OF STUDY
Draw-up a Master paln and Plan of stage on modernization of the Bolivian National Railways

8.DATE OF S/W: 1989/10

9.CONSULTANT(S)
Japan Railway Technical Service
Japan Transportaion Consultants, Inc.

10.STUDY TEAM

No.of Members 11
Period Mar.1990-Nov.1991(21 months)

| Total M/M | Japan | Field |
|---|---|---|
| 67.13 | 30.60 | 36.53 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY
None

12.EXPENDITURE

| | |
|---|---|
| Total | 255,739 (¥'000) |
| Contracted | 237,000 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA

Bolivia : Total railway length about 3,600km

2.PROJECT COST

| (US$1,000) | | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|---|
| | 1) | 1,456,000 | 234,000 | 1,222,000 |
| US$1=Bs. 3.2 | 2) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

Optimum railway network in 2020, and railway reinforcement plans by stage
1. Short-term plan (1991 - 2000) : Total investment, US$720 million
   1) Track improvement, 4 lines
   2) Rolling stock reinforcement
   3) Improvement of rolling stock workshops
   4) reinforcement of telecommunications network
2. Medium-term plan (2001 - 2010) : Total investment, US$ 485 million
   1) Track improvement, 2 lines
   2) Rolling stock reinforcement
   3) Improvement of rolling stock workshops
   4) Reinforcement of telecommunicaitons network
   5) Computer utilization
   6) New line construction, about 133km
3. Long-term plan (2011 - 2020) : Total investment, US$ 251 million
   1) Track improvement, 4 lines
   2) Rolling stock reinforcement
   3) Reinforcement of the railway training school

4.CONDITIONS AND DEVELOPMENT IMPACTS

Feconditions:
1) Appropriate scale of investment is determined by taking into consideration the economy of Bolivia and the financial situation of FNFE;
2) Railway improvement stage plans are proposed to enhance the contribution of the railway to the social, economic, and physical development of Bolivia, and to ensure reliable, safe, and stable transportation for domestic and international mobility;
3) In order to establish the priority for railway modernization and rehabilitation, comprehensive examination is made on such factors as safety of transport, effects of investment, relevance for railway management and operation, degree of urgency, relative importance of the lines concerned, and efficiency and profitability of operation.

Development Impacts:
1) Safe, stable, and efficient transportation
2) Contribution to economic development of Bolivia

5.TECHNICAL TRANSFER

1) Guidance on each field of technology during the detailed presentation of the reports (Esp. train operation planning and track maintenance)
2) Counterpart training (2 persons) on railway management conducted in

## III. PRESENT STATUS OF STUDY RESULTS

1.PRESENT STATUS

- [■] In Progress or In Use
- [ ] Delayed
- [ ] Discontinued

(Description)

The master plan should be implemented as early as possible, since its implementation is considered significant from the standpoint of national economy. As for the urgent projects, it is necessary to draw up an optimum plan by comparing various alternative plans through feasibility studies and the like. It is also necessary to promote railway reinforcement in terms of both hardware and software.

In connection with this project, the "Railway Improvement between Oruro and Cochabama (Topographical map preparation)" was officially announced in March 1993 as a project to be undertaken by JICA. A F/S is supposed to start after the completion of the topographical maps.

(FY1992 Overseas Survey)
The M/P is being excuted by ENFE according to the possible economic resources. The maintenance of the whole railway line is kept up. In several sections the track has been improved. Four new stations have been constructed. The repair of locomotive engines and equipment of workshops are being carried on. The F/S on the economic side for the Aiquile-Santa Cruz branch line has been already elaborated.

(FY1993 Overseas Survey)
The survey work to make a repair plan for the section between Aguas-Calientes Station and Ilpa-Ilpa Station along the line connecting Oruro and Cochabamba is implementing by JICA.
Bolivian National Railways wishes to make a Mater Plan including construction of railway network connecting Aiquile and Santa Cruz.

(FY1994 Domestic Survey)
The F/S has been undertaken concerning the railway inprovement plan between Oruro and Cochabamba.

(FY1995 Domestic Survey)
"Railway Improvement Plan between Oruro and Cochabanba (F/S)" is now implementing and is willing to submit the final report on Oct., 1995. Major points of the planned improvement are the route change for about 13km which should be done urgently and the improvement of the railway for about 69km where many derailed accidents had been happened within a section between Aguas-Calientes - Ilpa-Ilpa with a distance of about 55km, the major disastrous segment.

(FY1995 Overseas Survey)
No particular progress.

2.MAJOR REASONS FOR PRESENT STATUS

The M/P is considered as first priority project, but ENFE does not have enough economic resources to implement this project.

3.PRINCIPAL SOURCE OF INFORMATION

①、② Bolivian National Railways

和名 鉄道網整備計画

{M/P,Basic Study,Other}

# PROJECT SUMMARY (M/P+F/S)

Compiled Mar.1995
Revised Mar.1996

CSA BOL/S 212/93

## I. OUTLINE OF STUDY

1.COUNTRY: Bolivia

2.NAME OF STUDY: Control of Water Contamination of the Rivers in the City of Lapaz

3.SECTOR: Administration/Environmental Problems

4.REFERENCE NO.:

5.TYPE OF STUDY: M/P+F/S

6.COUNTERPART AGENCY: HAM, SAMAPA

7.OBJECTIVES OF STUDY: To draw up the basic plan of the measures to protect the water contamination, and the F/S of the project with high priority.

8.DATE OF S/W: 1991/2

9.CONSULTANT(S): Pacific Consultants International

10.STUDY TEAM

No.of Members 9

Period Feb.1992-May.1993 (16 months)

| Total M/M | Japan | Field |
|---|---|---|
| 56.12 | 22.86 | 33.26 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY
-Water quality Analysis
-Topo Survey
-Soil Survey

12.EXPENDITURE

| | |
|---|---|
| Total | 265,074 (¥'000) |
| Contracted | 219,384 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Basin of the Choqueyapu River(535km2)

2.PROJECT COST (US$1,000)

| | | Local Cost | Foreign Cost | |
|---|---|---|---|---|
| M/P | 1) | 46,030 | | |
| | 2) | | | |
| F/S | 1) | 19,660 | 17,470 | 2,180 |
| | 2) | | | |
| | 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)
-Intake of the Choqueyapu river water at the downstream of city center
-Transmission of the river water
-Construction of oxidation ponds at Iipari

Imp. Period: 1993. -2010.

4.FEASIBILITY AND ITS ASSUMPTIONS — Feasibility: Yes/No

| | |
|---|---|
| EIRR1) | FIRR1) |
| EIRR2) | FIRR2) |
| EIRR3) | FIRR3) |

Conditions and Development Impacts:
EIRR was not calculated because effects of water quality improvement can not be quantified economically.
Although the project may not be economically, the project has been reconnended to be implemented as a basic requirement for improvement of living environment.

5.TECHNICAL TRANSFER
Training in Japan(1 person)

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS
- ☐ Completed or in Progress
  - ○ Completed
  - ○ Partially Completed
  - ○ Implementing
  - ○ Processing
- ■ Promoting
- ☐ Delayed or Suspended
- ☐ Discontinued or Cancelled

(Description)
(FY1994 Domestic Survey)
In order to implement the project, it is required to arrange budget enough to maintain the facilities. At present it seems not to be promoted from the standpoint of cost/benefit.

(FY1995 Domestic Survey)
No additional information.

(FY1995 Overseas Survey)
The regulations regarding to the quality of residual water drained into river have been proclaimed. No other particular progress.

2.MAJOR REASONS FOR PRESENT STATUS
They seemed to expected that special methods to improve water pollution not by sewerage system would be proposed by The JICA Study.

3.PRINCIPAL SOURCE OF INFORMATION
①カウンターパートよりの聞き取り、②、④

和名 ラパス市水質汚濁対策計画調査

[M/P+F/S]

# PROJECT SUMMARY (M/P)

Compiled Mar.1988
Revised Mar.1996

CSA BRA/S 101/75

## I. OUTLINE OF STUDY

**1.COUNTRY** Brazil

**2.NAME OF STUDY**
Plano de construcao da nova ligacao ferroviao ferroviaria

**3.SECTOR**
Transportation/Railway

**4.REFERENCE NO.**

**5.TYPE OF STUDY** M/P

**6.COUNTERPART AGENCY**
REFFSA, and ENGEFER

**7.OBJECTIVES OF STUDY**
Plan for the construction of a new electrified railway line to carry iron ores

**8.DATE OF S/W** 1975/3

**9.CONSULTANT(S)**
The Japan Electrical Consulting Co., Ltd.
Pacific Consultants International

**10.STUDY TEAM**

No.of Members 15
Period May.1975-Dec.1975(7 months)

| Total M/M | Japan | Field |
|---|---|---|
| 83.00 | 50.00 | 33.00 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
None

**12.EXPENDITURE**
Total 58,231 (¥'000)
Contracted

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
Belo Horizonte-Itutinga-Sao Paulo; and Itutinga-Volta Redonda

**2.PROJECT COST**

| | | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|---|
| (US$1,000) | 1) | 890 | | |
| (US$1=9.07Cr.) | 2) | | | |

**3.CONTENTS OF MAJOR PROJECT(S)**
Plan for constructing a new electrified railway line:
the first phase, a 389km-section between Belo Horizonte and Volta Redonda; and the second phase, a 432km-section between Itutinga and Sao Paulo.
The features of the first phase are:
preration and rolling stock: max. speed of 60km/h; 9,000-ton hauling capacity per train; 18 trains per day in each direction when opened to traffic, and 105 in 2002
Structures and track: 171 tunnels, 86.9km; 124 bridges, 40.5km; track, broad gauge
Electrification: 2 x 25kv, AT feeding system
Signalling and operation control: Automatic blocking, CTC

**4.CONDITIONS AND DEVELOPMENT IMPACTS**
The transport capacity available is unable to meet increasing demands to carry iron ores produced in and around Belo Horizonte, Minas Gerais. It is expected that a planned new electrified railway line will help ensure the required capacity to transport iron ores to steel mills in Volta Redonda and San Paulo, and also promote the export to other countries from Sepetiba port.

**5.TECHNICAL TRANSFER**
OJT on railway technologies to counterparts (train operation planning, tracks, electrification, signalling and telecommunications, and rolling stock, and earth conductivity testing).

## III. PRESENT STATUS OF STUDY RESULTS

**1.PRESENT STATUS**
- ■ In Progress or In Use
- ☐ Delayed
- ☐ Discontinued

(Description)
At the international bidding held in 1976, the award went to a U.K. firm. The lack of funds, however, caused a long delay of construction.
According to the IRJ (International Railway Journal) of August 1989, only a 320km single-track line connecting Jeceaba near Belo Horizonte and Barra Mansa near Rio de Janeiro was reportedly constructed out of the proposed 900km of double-track electrified line linking Belo Horizonte to Rio de Janeiro and Sao Paulo. The railway is powered by diesel instead of electricity.
The railway has been in operation since 1989.

(FY1995 Domestic Survey)
No additional information.

**2.MAJOR REASONS FOR PRESENT STATUS**

**3.PRINCIPAL SOURCE OF INFORMATION**
①, ②

和名 鉄道新線建設計画

{M/P,Basic Study,Other}

# PROJECT SUMMARY (F/S)

Compiled Mar.1986
Revised Mar.1996

CSA BRA/S 301/77

## I. OUTLINE OF STUDY

1.COUNTRY: Brazil

2.NAME OF STUDY: Praia Mole Port Construction Project

3.SECTOR: Transportation/Port

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY: PORTOBRAS

7.OBJECTIVES OF STUDY: To study the feasibility on Praia Mole port construction project

8.DATE OF S/W: 1976/11

9.CONSULTANT(S): Overseas Coastal Area Development Institute

10.STUDY TEAM

No.of Members 9

Period Oct.1976-Aug.1977(12 months)

| Total M/M | Japan | Field |
|---|---|---|
| 21.50 | 12.20 | 9.30 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:

12.EXPENDITURE

| | |
|---|---|
| Total | 88,730 (¥'000) |
| Contracted | 67,013 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: The State of Espirito Santo

2.PROJECT COST (US$1,000) (US$1=Cr$12.8)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 374,296 | 311,722 | |
| 2) | | | |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)

The construction of a seaport, Praia Mole was planned about 600 km north of Rio des Janeiro Port.

| | |
|---|---|
| Breakwater | 7,100m |
| Timber Berth | 960m |
| Coal Berth | 590m |
| Oil Berth | 1set |
| Small Size Ship Berth | 350m |

Imp. Period: 1978.2-1983.8

4.FEASIBILITY AND ITS ASSUMPTIONS — Feasibility: Yes

| | | | |
|---|---|---|---|
| EIRR1) | 18.30 | FIRR1) | 6.50 |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:

Cargo volume is estimated taking into consideration such cargoes as half-completed products of and materials for the Tubarao steel factory. In the FIRR estimation, construction costs up to the second stage of the project are calculated. As a result it becomes clear that it would be necessary to receive government subsidies or to expect up to 20% of the actual port tariff revenues.

By promoting the construction of public berths in the present port which has been developed for the exclusive use of the Tubaraon steel factory, the new port would act as a commercial port producing more transportation and economic activities, thus improving the general quality of life in the region.

5.TECHNICAL TRANSFER: Giving counterparts ports and harbours planning technic by On-Job-Training

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- ☐ Completed or in Progress
  - ○ Completed
  - ○ Partially Completed
  - ○ Implementing
  - ○ Processing
- ☐ Promoting
- ☐ Delayed or Suspended
- ■ Discontinued or Cancelled

(Description)

Based on the proposals of the JICA study, OECF pledged a loan of about US$100 million for the construction of Praia Mole Port. However, at the 2nd Brazil-Japan Ministerial Meeting held in August 1979, the Brazilian Government requested that the loan be used for the construction of Tubalon Port, and the request was accepted. The loan agreement (11,985 million yen) was duly signed in Dec. 1981.

(FY1991 Overseas Survey)

The Brazilian Government realizes that the construction of Praia Mole Port will be necessary in the future, but that it will be implemented by the private sector participation in accordance with the policy of privatization.

(FY1994 Domestic Survey)

No additional information.

2.MAJOR REASONS FOR PRESENT STATUS: Large impact

3.PRINCIPAL SOURCE OF INFORMATION: ①, ②, ④

別名 ブライアモ・レ港建設計画



{F/S,D/D}

# PROJECT SUMMARY (M/P)

Compiled Mar.1986
Revised Mar.1996

CSA BRA/S 102/79

## I. OUTLINE OF STUDY

**1.COUNTRY** Brazil

**2.NAME OF STUDY**
Regional Development of the Three States: Espirito Santo, Minas Gerais and Goias

**3.SECTOR**
Development Plan/Integrated Regional Development Plan

**4.REFERENCE NO.**

**5.TYPE OF STUDY** M/P

**6.COUNTERPART AGENCY**
Committee of Three States

**7.OBJECTIVES OF STUDY**
Identification of export crop development potentials and of a related surface transportation system

**8.DATE OF S/W** 1978/5

**9.CONSULTANT(S)**
International Development Center of Japan

**10.STUDY TEAM**

| No.of Members | 11 | |
|---|---|---|
| Period | Jul.1978-Jul.1979(12 months) | |
| Total M/M | Japan | Field |
| 44.83 | 16.33 | 28.50 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
None

**12.EXPENDITURE**

| | |
|---|---|
| Total | 121,760 (¥'000) |
| Contracted | 116,542 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
The Cerrado Area of half a million square kilometers in the states of Minas Gerais and Goias.

**2.PROJECT COST**

| (US$1,000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| | 1) 1,328,000 | | |
| US$1=Cr$20 | 2) | | |

**3.CONTENTS OF MAJOR PROJECT(S)**
The study proposed a transportation system for exporting crops grown in inland areas. The major components are as follows.
Railway:
- Anapolis - Vitoria 1,819km (some section to be newly constructed)
- Pirapora - Vitoria 1,113km (some section to be newly constructed)
- Lengthening(490m) of crossing tracks at stations, installation of new train-crossing stations, and modernization of the train blocking system
Road: Construction of new feeder roads of 49,000km (1977-85 23,000km, 1985-90 26,000km)
Port: - Expansion of port-head silos at Port Capusba
- Installation of additional belt conveyers Storage: - Production-area warehouses(9.83 million tons)
- Silos excluding port-head silos (1.05 million tons)
- Distribution-warehouses(1.92 million tons)

**4.CONDITIONS AND DEVELOPMENT IMPACTS**
The Cerrado area lying in the central region of Brazil is one of the important agricultural frontiers of the country. The study identified soybean, maize and sorghum as suitable crops for the area, when appropriate efforts are made to improve the soil productivity, among others. By the improvement of transportation and marketing networks, the production of these grains in the Area A (the Triengulo Miniero and the southern part of Goias State) and the Area B (the area around Pirapora along the upper streams of Sao Francisco River) are estimated to reach the following levels by 1990.

| | | |
|---|---|---|
| Area A | 5.81 million ha | 12.6 million tons |
| Area B | 0.94 | 2.0 |

Major development impacts:
1) Decentrallization of economic activities
2) Development of agricultural frontiers (the Cerrado area)
3) Improvement of international balance of payments
4) Contribution of global food supply

**5.TECHINICAL TRANSFER**
Two counterparts participated in the JICA training program.
On-the-job training through the joint undertaking of the study to identify and evaluate agricultural potentials in the Cerrado area.

## III. PRESENT STATUS OF STUDY RESULTS

**1.PRESENT STATUS**
- [■] In Progress or In Use
- [ ] Delayed
- [ ] Discontinued

(Description)
Based on the findings of the study, the improvement and development of inland transportation facilities and the port facilities are under way in order to facilitate the agricultural development in the central region. For instance, the production of soybean in Brazil reached 20 million tons in 1989, and the contribution to be increase of the Cerrado Area has been growing.
As of August 1990, the staff of Rio Dose is following up the improvement of the export corridor to transport soybean and other agricultural products to Vitoria Port.

(FY 1993 Overseas Survey)
No additonal information.

(FY1994 Domestic Survey)(FY1995 Domestic Survey)
No additional information.

**2.MAJOR REASONS FOR PRESENT STATUS**

**3.PRINCIPAL SOURCE OF INFORMATION**
①、②

和名 三州開発計画

{M/P,Basic Study,Other}

# PROJECT SUMMARY (M/P)

Compiled Mar.1988
Revised Mar.1996

CSA BRA/S 103/80

## I. OUTLINE OF STUDY

1.COUNTRY: Brazil

2.NAME OF STUDY:
Establishment of the Fire Fighting Training Center in Brasilia D.F.

3.SECTOR:
Social Infrastructu/Archtecture & Housing

4.REFERENCE NO.:

5.TYPE OF STUDY: M/P

6.COUNTERPART AGENCY:
Fire Headquaters of Federal District (CBDF)

7.OBJECTIVES OF STUDY:
Study and training for fire-fighting activities

8.DATE OF S/W: 1979/10

9.CONSULTANT(S):
Nikken Sekkei Ltd.

10.STUDY TEAM:
No.of Members 21
Period Nov.1980-Mar.1981(5 months)

| Total M/M | Japan | Field |
|---|---|---|
| 19.33 | 13.13 | 6.20 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:
None

12.EXPENDITURE:

| | |
|---|---|
| Total | 72,456 (¥'000) |
| Contracted | 40,791 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA:
Brasilia

2.PROJECT COST:

| (US$1,000) | Total Cost | Locat Cost | Foreign Cost |
|---|---|---|---|
| 1) | | | |
| 2) | | | |

3.CONTENTS OF MAJOR PROJECT(S):
In preparation for the establishment of the Fire-Fighting Training Center in Brasilia, the basic design of the facilities and a manual for training programs are to be compiled.
- Basic design of the facilities: Site; 500m x 500m

Training Bldg., Indoor Training Ground, Fire-Fighting Training Bldg. for fires caused by oil, Outdoor Fire-Fighting Training Ground, Water Storage Tank, Diving Pool, Auditorium, Outdoor Circuit Training Ground and research facilities
- Training program A manual for training methods

4.CONDITIONS AND DEVELOPMENT IMPACTS:
The projected development impacts are the enhancement of educational training in Fire-Fighting and rescuing activities for newly-appointed firemen and fire officers in the education training facilities and the promotion of studies in the investigation of causes of fire in the research facilities, the combined effects of which will result in the modernization of fire fighting activities in Brasilia. The scope of technical cooperation is as follows:
1) Preparation of basic designs of educational and training facilities
2) Preparation of basic designs of research facilities
3) Recommendation and advice for establishment of educational and training programs
4) Recommendation and advice for establishment of research programs, procurement of necessary materials and equipment to the site, and acceptance of Brazilian trainees

5.TECHNICAL TRANSFER:
1) Accepting trainees
2) Providing materials and equipment as well as guidance

## III. PRESENT STATUS OF STUDY RESULTS

1.PRESENT STATUS:
- ■ In Progress or In Use
- ☐ Delayed
- ☐ Discontinued

(Description)
On the basis of this study made by the JICA team, the Brazilian Government undertook D/D and completed the construction of the trainang building, the annex training building and the diving pool. Part of the laboratory facilities were also completed.

(FY1991 Overseas Survey)
The Training Center was inaugurated in 1985, and the training of fire fighting squads commenced in 1986, utilizing the curriculum suggested by the JICA study. By 1991, the Center graduated 536 professional firemen.
During the period of 1987 - 1991, JICA sponsored the third-country training program, inviting a total of 125 trainees from other Latin American countries and Portuguese-speaking African countries.
The training courses have been highly acclaimed by the participants, especially with respect to its primary emphasis on preparedness rather than fire-fighting techniques and its safety precaution during the training sessions.

(FY1995 Domestic Survey)
No additional information.

2.MAJOR REASONS FOR PRESENT STATUS:
High priority

3.PRINCIPAL SOURCE OF INFORMATION:
①, ②

和名 消防訓練センター建設計画

{M/P,Basic Study,Other}

# PROJECT SUMMARY (M/P)

Compiled Mar.1990
Revised Mar.1996

CSA BRA/S 104/85

## I. OUTLINE OF STUDY

**1.COUNTRY** Brazil

**2.NAME OF STUDY**
Regional Development Plan of the Greater Carajas Program

**3.SECTOR**
Development Plan/Integrated Regional Development Plan

**4.REFERENCE NO.**

**5.TYPE OF STUDY** M/P

**6.COUNTERPART AGENCY**
Executive Secretariat, the Interministerial Council of the Greater Carajas Program

**7.OBJECTIVES OF STUDY**
Estimation of the export possibilities of products in the greater Carajas area and identification of regional development potentials

**8.DATE OF S/W** 1982/2

**9.CONSULTANT(S)**
International Development Center of Japan

**10.STUDY TEAM**

No.of Members 47

Period Sep.1982-Jul.1985(34 months)

| Total M/M | Japan | Field |
|---|---|---|
| 193.34 | 140.22 | 53.12 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
None

**12.EXPENDITURE**

| | |
|---|---|
| Total | 547,290 (¥'000) |
| Contracted | 500,569 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
Three states of Para, Maranhao and Goias (a total area of 0.9 million ha and a total population of 7.12 million)

**2.PROJECT COST**

| (US$1,000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | | | |
| 2) | | | |

**3.CONTENTS OF MAJOR PROJECT(S)**
The study was undertaken in two phases:
In the Phase I, the study examined the supply and demand trends in the world market up to the year 2000 over twenty-eight agricultural, livestock and forestry products and thirteen mining and manufacturing products which were considered to have high production potentials in the Greater Carajas Program Area.
In the Phase II, the study ascertained development potentials of the selected commodities and products in the priority sub-regions of the Program Area.

**4.CONDITIONS AND DEVELOPMENT IMPACTS**
The study was conducted to cooperate with the Brazilian Government in their effort to formulate an integrated regional development plan for the Greater Carajas Program Area. The Presidential Directives (Nos. 1813 and 85387) issued in November 1980 announces the major objectives of the Greater Carajas Program as follows.
1) Expansion of agricultural lands by rational land use systems
2) Population absorption in the Program Area by promoting industrialization
3) Amelioration of regional disparities by the decentralization of industries and encouragement of increased private investments

**5.TECHNICAL TRANSFER**
Counterparts participated in the JICA training program. On-the-job training was provided through the joint undertaking of the studies to identify and evaluate agricultural and mining potentials in the Greater

## III. PRESENT STATUS OF STUDY RESULTS

**1.PRESENT STATUS**
- [x] In Progress or In Use
- [ ] Delayed
- [ ] Discontinued

(Description)
The findings of the Phase 1 study were utilized as basic data for policy formulation by the Ministries of Planning, Mining and Energy and Agriculture.
The private sector has been active in the development of mineral resources (e.g. iron ores), and of agricultural potentials (e.g. cereals, oilseeds and beef cattle).
JICA financed the afforestation project along the Carajas railway. Valle do Rio Doce, the counterpart company of the study, has been active in environmental conservation and is promoting eucalyptus planting and other measures.

(FY1991 Overseas Survey)
The master plan was incorporated into the National Development Plan, and the following studies were undertaken.
1) Carajas Railway Development
2) Integrated Development in the Northern and Eastern Carajas
External assistance is need in the following areas.
1) Industrial development (metallurgy & wood processing)
2) Agricultural development (tropical forests and cereals in cerado)
3) Social development for low-income households (small-scale agriculture and labor-intensive industries)

(FY1994 Domestic Survey)(FY1995 Domestic Survey)
No additional information.

**2.MAJOR REASONS FOR PRESENT STATUS**

**3.PRINCIPAL SOURCE OF INFORMATION**
①、②

和名 大カラジャス地域総合開発計画



{M/P,Basic Study,Other}

# PROJECT SUMMARY (M/P+F/S)

Compiled Mar.1990
Revised Mar.1996

CSA BRA/S 201B/87

## I. OUTLINE OF STUDY

1.COUNTRY: Brazil

2.NAME OF STUDY:
Itajai River Basin Flood Control Project

3.SECTOR:
Social Infrastructu/River & Erosion Control

4.REFERENCE NO.:

5.TYPE OF STUDY: M/P+F/S

6.COUNTERPART AGENCY:
Secretaria do Desenvolvimento Regional

7.OBJECTIVES OF STUDY:
Feasibility study on the river improvement project in Blumenan-Gaspar stretch

8.DATE OF S/W: 1985/12

9.CONSULTANT(S):
Nippon Koei Co., Ltd.
Pacific Consultants International

10.STUDY TEAM

No.of Members 14
Period Apr.1986-Jan.1988(22 months)

| Total M/M | Japan | Field |
|---|---|---|
| 100.06 | 44.57 | 55.49 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:
Site Survey, Inspection of the Results of Topographic Survey Works

12.EXPENDITURE

| | | |
|---|---|---|
| Total | 359,012 | (¥'000) |
| Contracted | 340,694 | |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA:
<M/P> Itajai river basin with a catchment area of 15,220 sq.km
<F/S> Blumenan-Gaspar river stretch located at 70km upstream from the river mouth

2.PROJECT COST (US$1,000) (US$1=50Cz)

| | | Foreign Cost | Local Cost |
|---|---|---|---|
| M/P | 1) | | 300,000 |
| | 2) | | |
| F/S | 1) | | 65,000 |
| | 2) | | |
| | 3) | | |

3.CONTENTS OF MAJOR PROJECT(S)

<M/P>
River improvement of 73km out of the total river course of 250km, in order to protect urban centers along the river.

| Promising Project / Design Flood | Provisional plan 10-year | Mid-term plan 25-year | Long-term plna 50-year |
|---|---|---|---|
| River Improvement | | | |
| - Blumenau-Gaspar stretch | 24.5km (E) | 24.5km (E) | 24.5km (E) |
| - Floodway and downstream of Itajai Mirim | 14.5km | 14.5km (E) | 14.5km (E) |
| - Rio do Sul-Lontras and, Ituporanga stretches | 17.4km (E) | 17.4km (E) | 17.4km (E) |
| - Brusque stretch | 9.0km (E) | 9.0km (E) | 9.0km (E) |
| - Ilhota stretch | --- | --- | 3.7km (E) |
| - Ascurra stretch | --- | --- | 4.0km (E) |

Note; "E" means enlargement of channel.

<F/S>
River improvement by river channel widening and river dredging, and urban drainage works were proposed in the following area:
- River improvement for main Itajai river (32km) and major tributaries (18km in total)
- Urban drainage in Blumenan (drainage area; 19.2#sq.km)

Imp. Period: 1991. -1994.

4.FEASIBILITY AND ITS ASSUMPTIONS

Feasibility: Yes

| | | | |
|---|---|---|---|
| EIRR1) | 12.70 | FIRR1) | |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:

<M/P>
Protection level against flood will rise to 50 year probability from the current level of less than 2-year probability due to the implementation of the proposed project.
The proposed projects will be developed by applying the stages-wize method with the provisional, mid-term and long-term plans until the year of 2005.

<F/S>
- Project benefit is assumed to be annual mean flood damage to be mitigated by the proposed project.
- Flood protection level will be rise up to 10-year probability by provisional plan and 50-year probability by long-term plan.

5.TECHNICAL TRANSFER:
Training to river management is carried out for counterpart personnel through site inspection and lecture in Japan.

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- [■] Completed or in Progress
- [ ] Promoting
- ○ Completed
- ● Partially Completed
- [ ] Delayed or Suspended
- ○ Implementing
- ○ Processing
- [ ] Discontinued or Cancelled

(Description)

The detailed design and part of the construction were undertaken by the Brazilian Government. Because of the administrative reorganization of 1990, the project was transfered to the purview of the SDR (Secretaria Desenvolvimento Regional) from the ENOS. Around that time, approximately 80% of the river improvement had been completed. Subsequently, the construction was suspended owing to the worsening of the economic conditions in Brazil.

(FY1991 Overseas Survey)
The project proposed by the JICA study was assigned high priority in the national development strategy, and its urgency continues to be high.
SDR is hoping for similar Japanese technical assistance on other river basins.

(FY1993 Domestic Survey)
As of 1994, the Itajai river has managed by the provincial government including the flood contorl. <M/P>
Presently, the proposed projects in the Itajai river basic managed by the proviencial government. <F/S>

(FY1994 Domestic Survey)
The Santa Catarina provincial government has been expecting the financial assistance by the Gov't of Japan, and examining the request to the Gov't of Japan taking into account the domestic economic and political sitituations.

(FY1995 Domestic Survey)
No additional information.

2.MAJOR REASONS FOR PRESENT STATUS

3.PRINCIPAL SOURCE OF INFORMATION
①、②

和名 イタジャイ河流域治水計画



[M/P+F/S]

# PROJECT SUMMARY (F/S)

Compiled Mar.1991
Revised Mar.1996

CSA BRA/S 302/89

## I. OUTLINE OF STUDY

1.COUNTRY: Brazil

2.NAME OF STUDY: Flood Control Project in the Lower Itajai River Basin

3.SECTOR: Social Infrastructu/River & Erosion Control

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY: Ministerio da agricultra, departamento nacional de obras de saneamment

7.OBJECTIVES OF STUDY: To carry out feasibility study on flood control project in lower Itajai River basin

8.DATE OF S/W: 1988/7

9.CONSULTANT(S): Nippon Koei Co., Ltd.
Pacific Consultants International

10.STUDY TEAM

No.of Members 12

Period Oct.1988-Mar.1990(18 months)

| Total M/M | Japan | Field |
|---|---|---|
| 65.00 | 24.00 | 41.00 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY: -Topographic Survey in lower Itajai River basin -Geo-Technical investigation in lower Itajai River basin

12.EXPENDITURE

| | |
|---|---|
| Total | 304,002 (¥'000) |
| Contracted | 288,866 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: Lower Itajai river basin with catchment are of 601sq.km and population of 147,000

2.PROJECT COST (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 130,050 | 62,648 | 67,402 |
| 2) | | | |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S)
1.Construction of floodway(9km in length, design flood of 1230cu.m/s)
2.River improvement work in Itajai river (23km in length, design flood of 2770cu.m/s)
3.River improvement work in Itajai Mirim river (8km in length, design flood of 65cu.m/s)
4.Improvement work of existing short-cut channel (4km in length, design flood of 670cu.m/s)
5.Urban drainage works (construction of regulating ponds, pump stations, etc.)

Imp. Period: 1994. -1998.

4.FEASIBILITY AND ITS ASSUMPTIONS: Feasibility: Yes

| | | | |
|---|---|---|---|
| EIRR1) | 7.10 | FIRR1) | |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:
Conditions:
1.Land compensation for proposed floodway route area
2.Obtaining of agreement from municipality of Novegantes regarding construction of floodway
Development Impacts:
1.Stabilization of livelihood in flood protection area
2.Enhancement of land use in flood protection area
3.Increase in job opportunity and activation of regional economy

5.TECHNICAL TRANSFER: Technical knowledge was transferred to counterpart personal regarding survey procedure, data analysis and planning procedure throughout field works

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS
- ☐ Completed or in Progress
- ■ Promoting
- ○ Completed
- ○ Partially Completed
- ○ Implementing
- ○ Processing
- ☐ Delayed or Suspended
- ☐ Discontinued or Cancelled

(Description)
(FY1991 Overseas Survey)
The project implementation is somewhat delayed owing to the on-going reorganization of the Federal Government. The priority of the project remains high and the urgent need of implementation is recognized. The Government is working on the budget allocation to facilitate the implementation.

(FY1994 Domestic Survey)
The Santa Catarina provincial government has been expecting the financial assistance by the Gov't of Japan, and examining the request to the Gov't of Japan taking into account the domestic economic and political situations.

(FY1995 Domestic Survey)
No additional information.

2.MAJOR REASONS FOR PRESENT STATUS: Shortage of budget (BNDS was going to implement the project with OECF's fund in Japan just after completion of F/S, but it is not likely to be financed with the fund in near future. Further, it is reported that at present BNDS is subject to severe shortage of budget, which results in insufficient O & M of completed works.

3.PRINCIPAL SOURCE OF INFORMATION: ①, ②

和名 イタジャイ河下流域治水計画

{F/S,D/D}

# PROJECT SUMMARY (M/P+F/S)

Compiled Mar.1992
Revised Mar.1996

CSA BRA/S 202B/90

## I. OUTLINE OF STUDY

**1.COUNTRY** Brazil

**2.NAME OF STUDY**
Disaster Prevention and Restoration Project in Serra Do Mar, Cubatao Region

**3.SECTOR**
Social Infrastructu/River & Erosion Control

**4.REFERENCE NO.**

**5.TYPE OF STUDY** M/P+F/S

**6.COUNTERPART AGENCY**
Secretaria de Meio Ambiente (SMA), Instituto de Pesquisas
Tecnologicas do Estado de Sao Paulo (IPT), and others (CETESB, DAEE, IBt).

**7.OBJECTIVES OF STUDY**
1) To formulate a master plan to the year 2000 and to select priority projects.
2) To conduct feasibility study on priority projects by year 1995.

**8.DATE OF S/W** 1989/6

**9.CONSULTANT(S)**
Nippon Koei Co., Ltd.
Nikken Consultants., Inc.

**10.STUDY TEAM**
No.of Members 11
Period Nov.1989-Jan.1991(15 months)

| Total M/M | Japan | Field |
|---|---|---|
| 64.19 | 13.13 | 51.06 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**
Topographic Survey, Core Boring and Logging Survey

**12.EXPENDITURE**

| | |
|---|---|
| Total | 303,183 (¥'000) |
| Contracted | 271,359 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
Serra Do Mar, Cubatao Region (252 sq.km) in the State of Sao Paulo

**2.PROJECT COST** (US$1,000)

| | | | | |
|---|---|---|---|---|
| M/P 1) | 75,000 Local | 38,500 Foreign | 36,500 |
| 2) | 65,900 Cost | 28,900 Cost | 37,000 |
| F/S 1) | 25,700 | 13,400 | 12,300 |
| 2) | 11,400 | 5,100 | 6,300 |
| 3) | 1,300 | 500 | 800 |

**3.CONTENTS OF MAJOR PROJECT(S)**
<M/P>1) Sediment Run-off Prevention Plan...32 sabo dams, 11 channel works with total length of 5.7 km.
2) Flood Prevention Plan
1.Cubatao River Improvement...discharge tunnel 600m * 2, river improvement 6.7km.
2.Moji River Improvement...river improvement 9.5m
3) Forest Restoration Plan...20,000 seedlings plant in 20 replantation areas. (target year 2000)
4) Non-structural Measures...hazard maps, etc.

<F/S>1) Sediments Run-off Prevention Plan...9 sabo dams, designed for the probable sediment discharge of about a 25-year return period, which is approximately equal to the post maximum discharge of 1985.
Six (6) channel works including ground (downstream from Sabo damsite with a length of about 3km in total)
2) Moji River Improvement Plan...river/improvement of 4.5km for 10-year probable flood
3) Forest restoration plan...20,000 seedlings (height 0.4-1.0m)

**Imp. Period:** 1991. -1995.

**4.FEASIBILITY AND ITS ASSUMPTIONS** Feasibility: Yes

| | | | |
|---|---|---|---|
| EIRR1) | 18.20 | FIRR1) | |
| EIRR2) | 11.10 | FIRR2) | |
| EIRR3) | | FIRR3) | |

**Conditions and Development Impacts:**
<M/P> 1) Sediment Run-off Prevention Plan
The plan was formulated on the assumption that present vegetation condition will not be improved by year 2000. The plan identified 12 Sabo subbasins as protection area with design scale of a 100 year return period.
2) Flood Prevention Plan
The plan was formulated on the basis of urban area and industrial establishments, with a design scale of a 50-year return period for mainstreams of the Cubatao and Moji rivers, and a 25-year return period for their tributaries.
<F/S>Priority projects aiming at the target year to 1995 was selected in view of economic viability (EIRR) as well as unmeasurable social impacts and intangible damages which would be induced from sediment run-off disasters.

**5.TECHNICAL TRANSFER**
Over 110 Brazilian audience participated in the seminar at the submission of draft final report.Conducted on-the-job training with each Brazilian expertise, and held seminars and sessions when submitting study reports.

## III. PRESENT STATUS OF STUDIED PROJECT

**1.PRESENT STATUS**
- ☐ Completed or in Progress
  - ○ Completed
  - ○ Partially Completed
  - ○ Implementing
  - ○ Processing
- ■ Promoting
- ☐ Delayed or Suspended
- ☐ Discontinued or Cancelled

**(Description)**
1) Brazilian Government is considering the possibility of financing from either the World Bank or Japanese Government for the implementation of the Sediment Run-off Prevention Plan.
2) The Government is planning to implement the Moji River Improvement with its own funds.

(FY1991 Overseas Survey)
<M/P> Efforts are being made to implement the findings of the M/P by Secretaria de Meio Ambiente (SMA) and relevant task forces.
<F/S> The project has been assigned high priority, but the financial arrangement for its implementation is being delayed owing to political and administrative reasons.

(FY1994 Domestic Survey)(FY1995 Domestic Survey)
No additional information

**2.MAJOR REASONS FOR PRESENT STATUS**

**3.PRINCIPAL SOURCE OF INFORMATION**
①, ②

和名 クバトン地域海岸山脈災害防止復旧計画

[M/P+F/S]

# PROJECT SUMMARY (M/P)

Compiled Mar.1992
Revised Mar.1996

CSA BRA/S 105/91

## I. OUTLINE OF STUDY

1.COUNTRY: Brazil

2.NAME OF STUDY
Urban Transport in Belem

3.SECTOR
Transportation/Urban Transportaion

4.REFERENCE NO.

5.TYPE OF STUDY: M/P

6.COUNTERPART AGENCY
EMTU
SEPLAN

7.OBJECTIVES OF STUDY
Master plan study on urban transport

8.DATE OF S/W: 1989/4

9.CONSULTANT(S)
Chodai Co., Ltd.
Yachiyo Engineering Co., Ltd.

10.STUDY TEAM
No.of Members 11
Period Oct.1989-Jun.1991(21 months)

| Total M/M | Japan | Field |
|---|---|---|
| 76.04 | 10.04 | 66.00 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY
Traffic Volume Survey

12.EXPENDITURE

| | |
|---|---|
| Total | 340,124 (¥'000) |
| Contracted | 317,322 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA
Belem/Ananindeau

2.PROJECT COST

| (US$1.000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 390,500 | 318,000 | 72,500 |
| 2) | | | |

3.CONTENTS OF MAJOR PROJECT(S)
(1)Medium Term Plan(1990-2000)
1) Trunk Road Construction & Improvement: 12 projects, US$180 million
2) Construction of Public Bus Facilities: 21 projects, US$30 million
3) Improvement of Intersection, Road Width Widening, US$1.5 million

(2) Long term Plan (2001-2010)
1) Trunk Road Construction & Improvement: 10 projects, US$160 million
2) Construction of Public Bus Facilities: 10 projects, US$10 million
3) Traffic Administration Facility improvement: US$6 million

4.CONDITIONS AND DEVELOPMENT IMPACTS
Conditions: Forecast of traffic demand is carried out using the framework of the future population size, industrial output, GDP, family income, future landuse of the cities of Belem and Ananindeua based on the person trip survey at 1990.

Planning Policy:
1) Road network
- improvement of trunk roads
- improvement of feeder road network in suburban area
2) Public transport
- trunk-feeder bus system introduction to increase public transport capacity
3) Traffic management
- effective use of the current facilities

Development Impacts
- Reduction of V.O.C.
- Reduction of travel time

5.TECHNICAL TRANSFER
Showed the methodology and planning procedure for cosprehensive urban transport planning and the held the semll scale seminar to public.

## III. PRESENT STATUS OF STUDY RESULTS

1.PRESENT STATUS
- [x] In Progress or In Use
- [ ] Delayed
- [ ] Discontinued

(Description)
Para State and Belem Municipality are anxious to execute the feasibility study continously. However, the Department of the Central Government as for the urban transport is not yet determined. The request for feasibility study has not arrived at the ABC, the window for technical cooperation.
Because of the change of the Brasilian Central Gorvernment Administration, the Government policy for technical cooperation might change. However,no movements are observed until now.

(FY1992 Overseas Survey)
Waiting for the answer.

(FY1994 Domestic Survey)
The movement for implementation of the study is not yet realized, although the improvement of some road sections, that the M/P recommended, were carried out by the Local Government's own effonts.

(FY1995 Domestic Survey)
No additional information.

2.MAJOR REASONS FOR PRESENT STATUS
Political decision by the Central Government is not to retale with urban transport matter, which is transferred to the local government responsibility.

3.PRINCIPAL SOURCE OF INFORMATION
①, ②

和名 ベレーン市都市交通計画

{M/P,Basic Study,Other}

# PROJECT SUMMARY (M/P)

Compiled Mar.1995
Revised Mar.1996

CSA BRA/S 305/93

## I. OUTLINE OF STUDY

**1.COUNTRY** Brazil

**2.NAME OF STUDY**
Recuperation of the Guanabara Bay Ecosystem

**3.SECTOR**
Administration/Environmental Problems

**4.REFERENCE NO.**

**5.TYPE OF STUDY** M/P

**6.COUNTERPART AGENCY**
FEEMA(Fundacao Estadual de Engenharia do Meio Ambiente)

**7.OBJECTIVES OF STUDY**
To formulate a master plan for the water pollution control and the recuperation of Guanabara Bay's ecosystem.

**8.DATE OF S/W** 1991/10

**9.CONSULTANT(S)**

**10.STUDY TEAM**
No.of Members 12
Period Mar.1992-Mar.1994(25 months)

| Total M/M | Japan | Field |
|---|---|---|
| 98.73 | 38.26 | 60.47 |

**11.ASSOCIATED AND/OR SUBCONTRACTED STUDY**

**12.EXPENDITURE**

| | |
|---|---|
| Total | 595,838 (¥'000) |
| Contracted | 285,551 |

## II. SUMMARY OF STUDY RESULTS

**1.SITE OR AREA**
Guanabara bay(400 km2) and its basin(4,000km2)

**2.PROJECT COST**

| (US$1,000) | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | 1,205,000 | | |
| 2) | | | |

**3.CONTENTS OF MAJOR PROJECT(S)**
Eastern Basin: Primary STP + Tertiary STP, Joint TP for Sea-product processing factory

Northeastern Basin: Stabilization Pond, Land use control

Northwestern Basin: Primary STP + Stabilization Pond, Land use control, Joint TP for Petrochemical factories

Western Basin: Primary STP + Ocean outfall system, Imp. of Sanitary services in Favela

**4.CONDITIONS AND DEVELOPMENT IMPACTS**
This study aims to present synthetic strategy for water pollution controll and recuperation of ecosystem in Guanabara bay. Designing of waste water treatment facilities and the planning of socio-economical system are left for the F/S to be inplemented from now on. When the countermeasures were applied, a large amount of socio-economical benefit like improvement of living environment, increase of marine products and securing of clean recreational areas will be obtained.

**5.TECHNICAL TRANSFER**
transfered survey and observation techniques for water area and computer simulation techniques for water pollution control.

## III. PRESENT STATUS OF STUDY RESULTS

**1.PRESENT STATUS**
- ■ In Progress or In Use
- □ Delayed
- □ Discontinued

(Description)
The Study Team recommended to FEEMA to implement the F/S for the countermeasure examination to reduce inflow load and stored load of the Eastern Basin. FEEMA presented the planning form of F/S based on the recommendations in June, 1994 to ABC (Brazilian Cooperation Agency). ABC requested to JICA to implement the F/S planned by FEEMA in July, 1994.

(FY1995 Domestic Survey)
The Embassy of Japan for Brazil conveyed above-mentioned official request to the Ministry of Foreign Affairs of Japan. However, the Ministry is not take up this project as yet as the Ministry worries about some conflict with the Sewerage Project of IDB which is inplementing at the eastern basin of the Guanabara Bay.
Kokusai Kougyo Co., Ltd. have explained to JICA that there is no such a kind of problem about the conflict on the occasion of JICA's hearing held on May, 1995. On the other hand, the Local Government of Rio de Janeiro have requested to Japanese side to inplement the project is an early stage.

**2.MAJOR REASONS FOR PRESENT STATUS**

**3.PRINCIPAL SOURCE OF INFORMATION**
①, ⑥ (FEEMA)

和名 グァナバラ湾水質汚濁防止計画調査

{M/P,Basic Study,Other}

# PROJECT SUMMARY (F/S)

Compiled Sep.1995
Revised Mar.1996

CSA BRA/S 306/94

## I. OUTLINE OF STUDY

1.COUNTRY: Brazil

2.NAME OF STUDY:
Navigation of the Parnaiba River Basin

3.SECTOR:
Transportation/Port

4.REFERENCE NO.:

5.TYPE OF STUDY: F/S

6.COUNTERPART AGENCY:
Secretaria de Planejament do Estado do Piaui (SEPLAN, ABC)

7.OBJECTIVES OF STUDY:
Investigate the possibility of ship transportation along the Parnaiba River

8.DATE OF S/W: /

9.CONSULTANT(S):
Pacific Consultants International

10.STUDY TEAM

No.of Members 11

Period Dec.1992-Mar.1995(28 months)

| Total M/M | Japan | Field |
|---|---|---|
| 53.01 | 23.30 | 29.71 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY:
Shooting aerial photos, Construction of water control facilities, Screening analysis.

12.EXPENDITURE

| | |
|---|---|
| Total | 250,000 (¥'000) |
| Contracted | |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA:
Upper reaches to lower reaches of the Parnaiba River (approx. 1,400m)

2.PROJECT COST (US$1,000)

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| 1) | | | |
| 2) | | | |
| 3) | | | |

3.CONTENTS OF MAJOR PROJECT(S):
Water level of the Parnaiba River changes 1.5 to 2.0m during the dry and the rainy season. The ship transportation in between upper reaches to Teresina during the rainy season and in between upper reaches to Floriano during the dry season are recommended respectively. In order to materialize this plan, as for the major works, the followings will be necessary.
(1)Renovate the lock at Boa Esperanca.
(2)Renovate the river ports (7 to 8 ports from Sta. Filomena in upper reaches to Teresia in middle reaches).
(3)Shipbuilding (500DWT X 30 ships)
(4)Arrange the beacons along the routes.
(5)Establish the ship-transportation administrative office.
(6)Arrange the pilotage system.

Imp. Period:

4.FEASIBILITY AND ITS ASSUMPTIONS

Feasibility: Yes/No

| | | | |
|---|---|---|---|
| EIRR1) | 12.00 | FIRR1) | 10.00 |
| EIRR2) | | FIRR2) | |
| EIRR3) | | FIRR3) | |

Conditions and Development Impacts:
[Conditions]
(1)Maintain the road conditions in the upper reaches area of the River as existing at present.
(2)Utilize existing infrastructure of transportation from Teresina.
(3)Keep the sandbanks in the river as they are.

[Development Impacts]
(1)Becomes possible to transport agricultural products from upper reaches area of the River.
(2)As the result, Rural economical activities are much encouraged.

5.TECHNICAL TRANSFER
(1)Training in Japan (2 persons)
(2)Observation of the movement of riverbed at the site

## III. PRESENT STATUS OF STUDIED PROJECT

1.PRESENT STATUS

- [ ] Completed or in Progress
  - ○ Completed
  - ○ Partially Completed
  - ○ Implementing
  - ○ Processing
- [■] Promoting
- [ ] Delayed or Suspended
- [ ] Discontinued or Cancelled

(Description)
On March, 1995, when this survey work completed, it has been requested to implement the pilotage works, which was recommended by the survey report, before the commencement of full-scaled ship transportaion. In order to implement the pilotage works, an organization for the ship-transportation along the Parnaiba River is goint to be established. A VIP, who has been interested in this ship-transportation, has been elected and established a good connection with the Central Government. According to some information, he already got some of budget allocation fot this project. However, more details are not available.

2.MAJOR REASONS FOR PRESENT STATUS

3.PRINCIPAL SOURCE OF INFORMATION
①

和名 パルナイバ川水系船舶航路整備計画調査

{F/S,D/D}

# PROJECT SUMMARY (M/P)

Compiled Mar.1986
Revised Mar.1996

CSA CHL/S 101/83

## I. OUTLINE OF STUDY

1.COUNTRY: Chile

2.NAME OF STUDY: State Railways Modernization Project

3.SECTOR: Transportation/Railway

4.REFERENCE NO.:

5.TYPE OF STUDY: M/P

6.COUNTERPART AGENCY: Chilean State Railways

7.OBJECTIVES OF STUDY: Suggestions and recommendations necessary for the modernization of freight car operation, freight transport system, and business activities dealing with passengers and freight

8.DATE OF S/W: 1982/3

9.CONSULTANT(S): Japan Railway Technical Service

10.STUDY TEAM

No.of Members 16

Period Jul.1982-Jun.1983 (12 months)

| Total M/M | Japan | Field |
|---|---|---|
| 62.50 | 35.50 | 27.00 |

11.ASSOCIATED AND/OR SUBCONTRACTED STUDY: None

12.EXPENDITURE

| | |
|---|---|
| Total | 201,430 (¥'000) |
| Contracted | 183,099 |

## II. SUMMARY OF STUDY RESULTS

1.SITE OR AREA: All of the lines of the Chilean State Railways

2.PROJECT COST

| | Total Cost | Local Cost | Foreign Cost |
|---|---|---|---|
| (US$1,000) | 1) | | |
| (US$1=245 yen=70 pesos) | 2) | | |

3.CONTENTS OF MAJOR PROJECT(S)

In project 1, recommendations were made mainly on the improvement of freight car operation and information systems. In project 2, recommendations were made mainly on the basis of drawing up commercial policies.

Main recommendations:
For freight service--- 1) Reinforcement of a transport setup between main base stations; 2) introduction of an administration system for revenue targets; 3) promotion of individual contract systems with influencial forwarders; 4) increase in marine container transport; and 5) efficient freight car operation.
For passenger service--- 1) Reinforcement of long-distance truck line transport and intercity transport; 2) improvement of the seat reservation system, etc.
For the telecommunications sector---
Immediate improvement of superannuated facilities

4.CONDITIONS AND DEVELOPMENT IMPACTS

Improvement impacts:
1) Increase of efficiency in freight car operation and improvement of transport services
2) Sufficient display of the railway's functions in its competition with other modes of transport

5.TECHNICAL TRANSFER

1) Four counterparts personnel received training.
2) Report prepared in cooperation with counterparts.

## III. PRESENT STATUS OF STUDY RESULTS

1.PRESENT STATUS

- ■ In Progress or In Use
- ☐ Delayed
- ☐ Discontinued

(Description)

The recommendations of the study were taken into consideration by the Chilean State Railways in drawing up operational policies.

Nov.1992 OECF loan agreement 6,412 million yen
(Railway Rehabilitation Project)
Major components: Rehabilitation of railway facilities and trains

(FY1991 Overseas Survey)
The State Railways reviewed the study in order to formulate its Railway Rehabilitation Plan. The State Railways has been implementing the study's proposals concerning freight car operation and telecommunication with its own funds. The Railway Reconstruction Plan (estimated cost of US$48 million) is under deliberation at the legislature.

(FY1994 Domestic Survey)(FY1995 Domestic Survey)
No additional information.

(FY1995 Overseas Survey)
Due to the lack of finance, the improvement of freight cars and infrastructures were not progressed and the State Railway couldn't get competitive capacities. Therefore, the loss due to reduction of passengers caused by inferior facilities becomes about 50% of total revenue during FY1993 to 1994.
In order to recover such an unfavourable circumstances, reinforcement works of the 1st stage have been commenced on 1994 with a budget of 70million USD. 75% of this amount will be supplied by OECF. This reinforcement works basically aim at the improvement of the infrastructures.
For the 2nd stage construction works, the range of works will be expanded much wider, and to make it possible to drive the passengers' trains in between Santiago and Puerto Montt with an average velocity of 100km per hour. Quick assistance from Japan in eagerly expected.

2.MAJOR REASONS FOR PRESENT STATUS

3.PRINCIPAL SOURCE OF INFORMATION

①、②

別名 国鉄近代化計画

{M/P,Basic Study,Other}