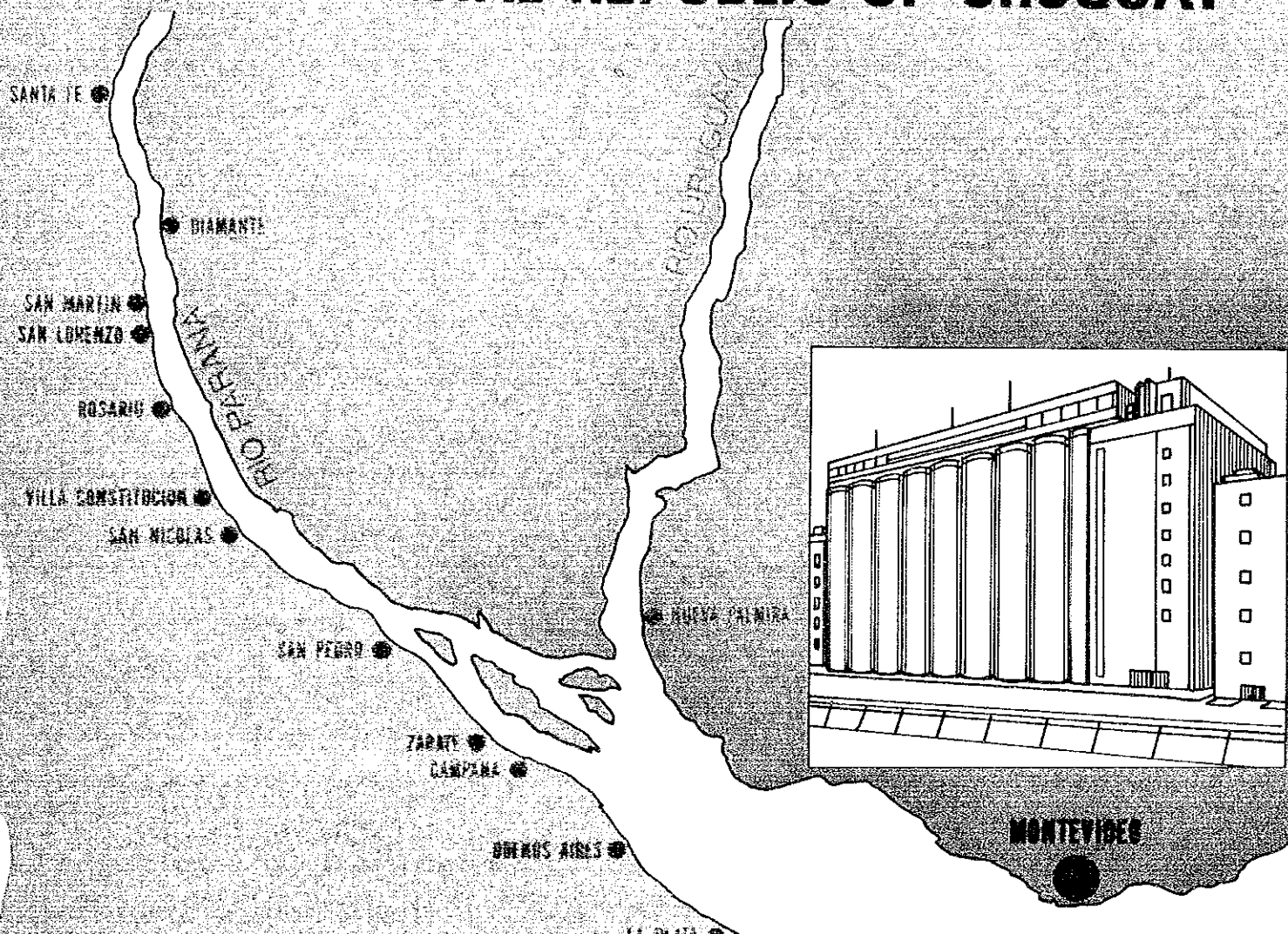


FINAL REPORT THE FEASIBILITY STUDY ON THE DEVELOPMENT OF NEW PORT TERMINALS AT MONTEVIDEO PORT IN THE ORIENTAL REPUBLIC OF URUGUAY

FINAL REPORT
ON THE FEASIBILITY STUDY
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FEBRUARY 1993

JAPAN INTERNATIONAL COOPERATION AGENCY



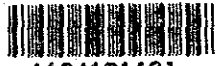
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**FINAL REPORT
THE FEASIBILITY STUDY ON
THE DEVELOPMENT
OF NEW PORT TERMINALS
AT MONTEVIDEO PORT
IN THE ORIENTAL REPUBLIC OF URUGUAY**

FEBURUARY 1993

国際協力事業団

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PREFACE

In response to a request from the Government of the Oriental Republic of Uruguay, the Government of Japan decided to conduct a feasibility study on the Development of New Port Terminals at the Montevideo Port and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Uruguay a study team headed by Mr. Jiro Kano, Advisor of the Overseas Coastal Area Development Institute of Japan, three times between February 1992 and November 1992.

The team held discussions with the officials concerned of the Government of Uruguay, and conducted field surveys at the study area. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Oriental Republic of Uruguay for their close cooperation extended to the team.

February 1993



Kensuke Yanagiya

President

Japan International Cooperation Agency

LETTER OF TRANSMITTAL

February 1993

Mr. Kensuke Yanagiya
President
Japan International Cooperation Agency

Dear Mr. Yanagiya

It is my great pleasure to submit herewith the Final Report for the Feasibility Study on the Development of New Port Terminals at Montevideo Port in the Oriental Republic of Uruguay.

The report is the result of studies carried out by the Overseas Coastal Area Development Institute of Japan (OCDI) and Nippon Tetrapod Co., Ltd. as per the contract with the Japan International Cooperation Agency (JICA). The study team conducted three field surveys between February 1992 and November 1992.

Based on the findings of these surveys and on data and information collected and analyzed in Japan, the short term development plan of main port facilities was formulated with a target year of 1998, including a feasibility study.

The study shows that the development of main port facilities at Montevideo Port is important. I earnestly hope that measures will be taken to implement this project.

On behalf of the study team, let me express my heartfelt thanks for the generous cooperation, assistance and warm hospitality extended to the study team during their stay in Uruguay.

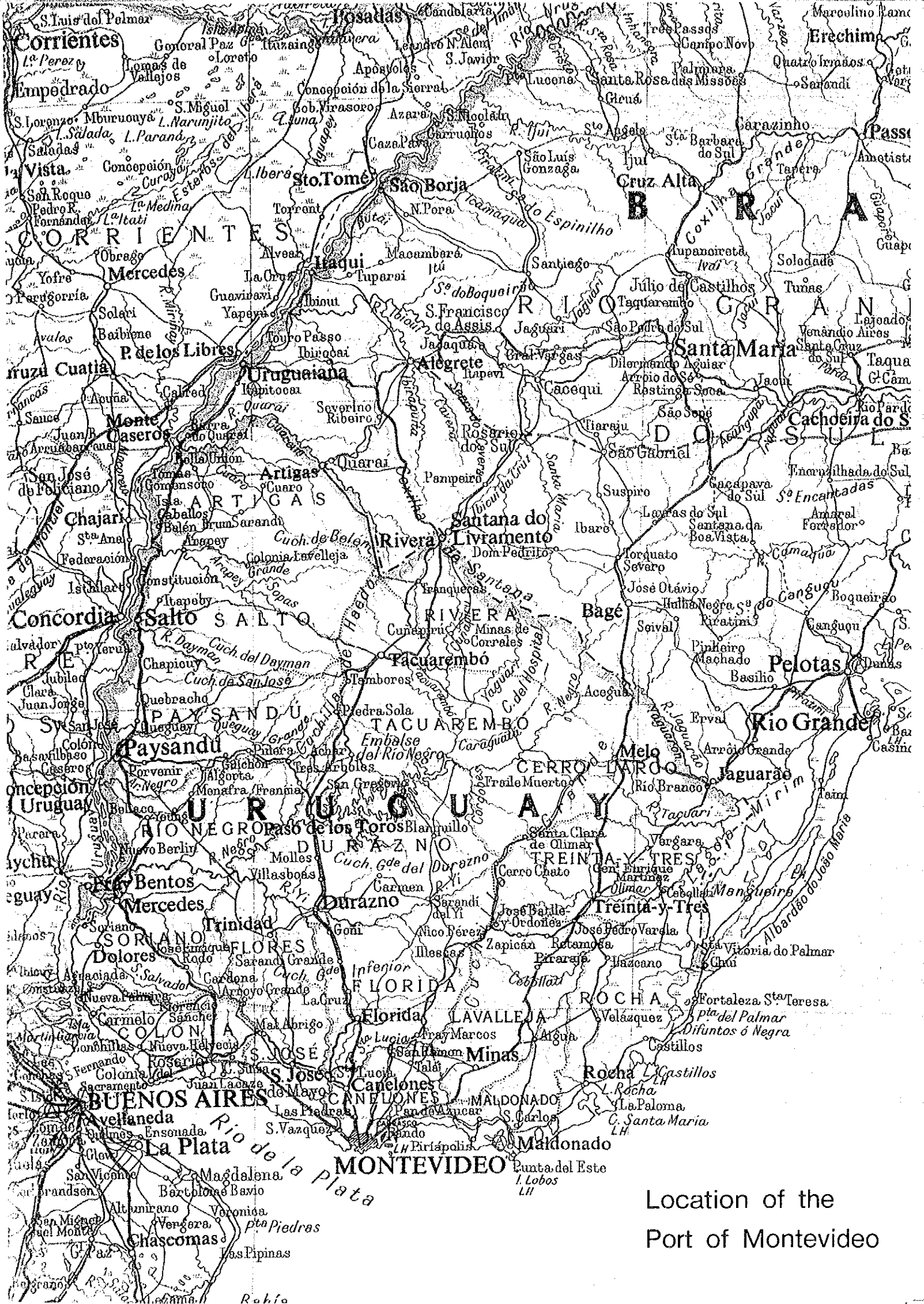
Our thanks are also due to the Japan International Cooperation Agency, the Ministry of Foreign Affairs, the Ministry of Transport and the Japanese Embassy in Uruguay for their valuable advice and support during the field survey and preparation of this report.

Yours Faithfully,

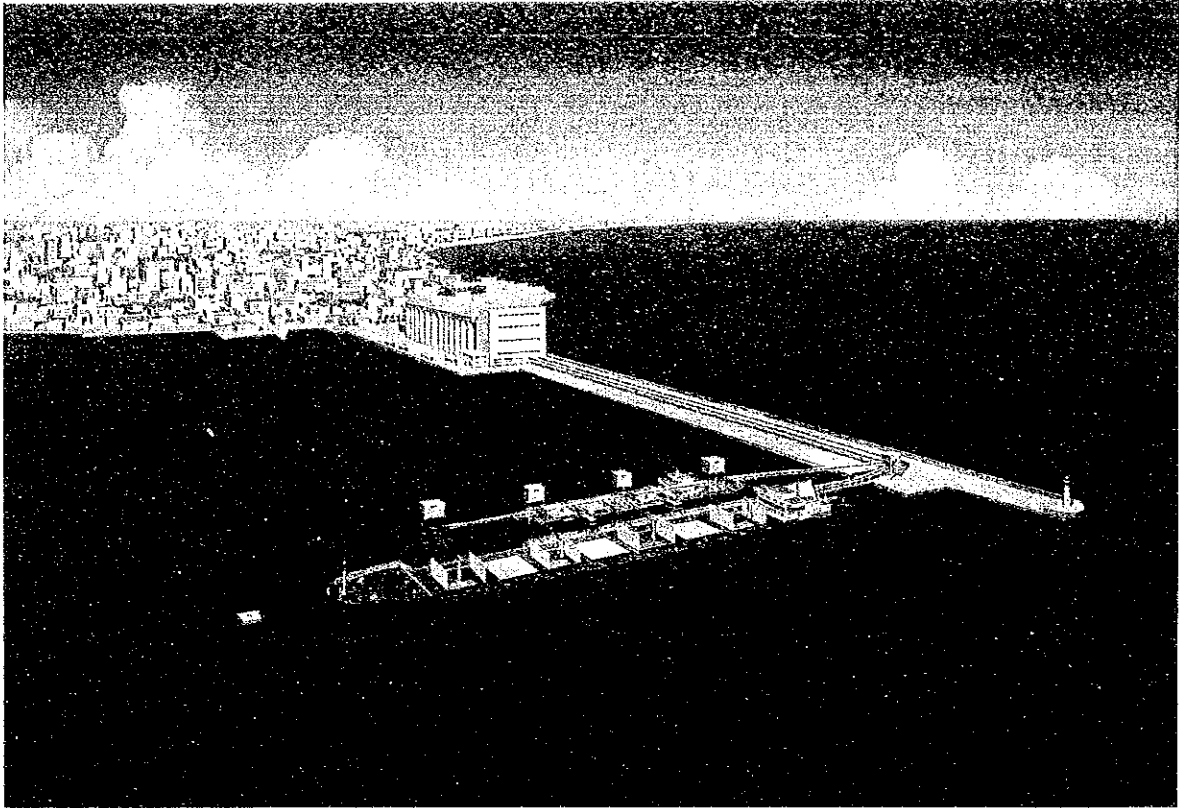


Jiro Kano
Leader

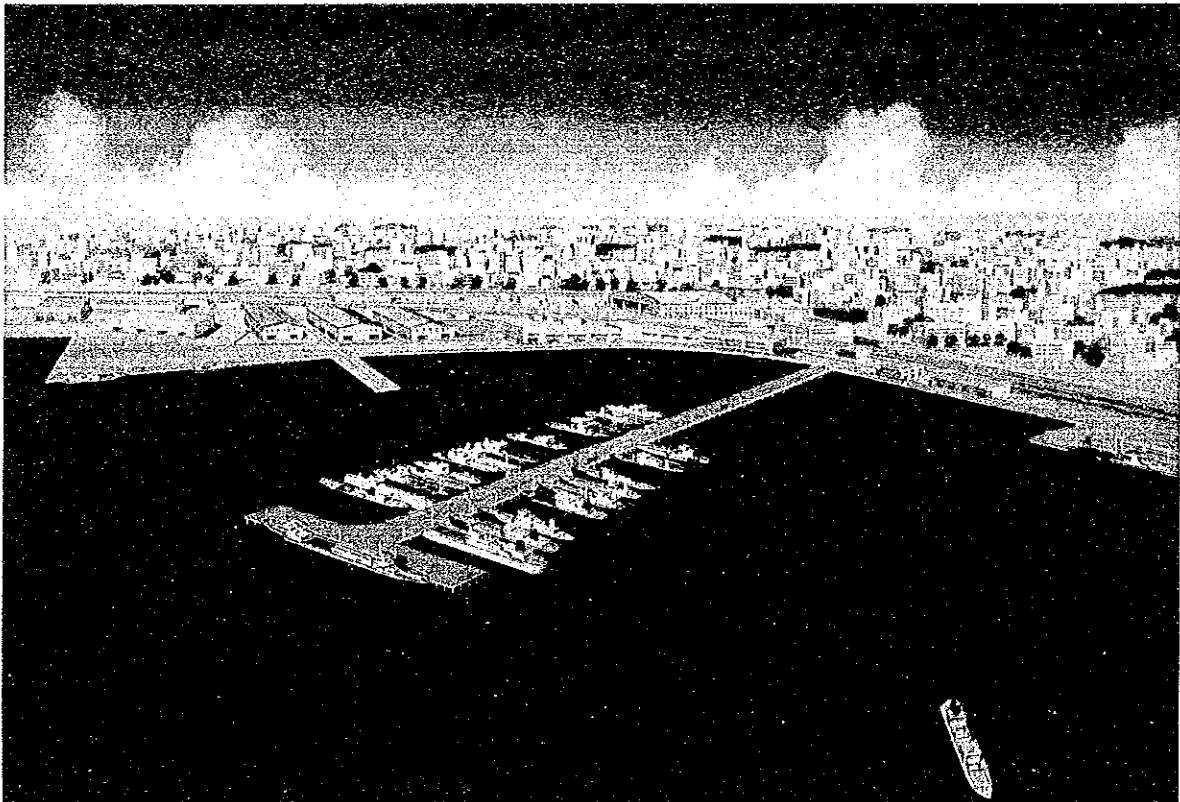
Japanese Study Team for the Feasibility
Study on the Development of New Port
Terminals at Montevideo Port in the Oriental
Republic of Uruguay (Adviser, the Overseas
Coastal Area Development Institute of Japan)



Location of the Port of Montevideo



Grain Terminal



Foreign Fishing Terminal

ABBREVIATIONS

ACA	Asociacion de Cooperativas Argentinas
AFE	Administracion de Ferrocarriles del Estado
ANCAP	Administracion Nacional de Combustibles, Alcohol y Portland
ANNP	Administracion Nacional de Navegacion y Puertos(Paraguay)
ANP	Administracion Nacional de Puertos
ANSE	Administracion Nacional de Servicios de Estiba
CATIDU	Camara Autotransporte Terrestre Internacional del Uruguay
C.D. Este	Cuidad del Este
CDL	Chart Datum Level
DGEC	Direccion General de Estadistica y Censos
DIEA	Direccion de Investigaciones Economicas Agropecuarias
DIGRA	Direccion de Granos
DNH	Direccion Nacional de Hidrografia
DNT	Direccion Nacional de Transporte
DNV	Direccion Nacional de Vialidad
FACA	Federacion Argentina de Cooperativas Agrarias
INAC	Instituto Nacional de Carnes
INAPE	Instituto Nacional de Pesca
JNG	Junta Nacional de Granos
MERCOSUR	Mercado Comun del Sur
MGAP	Ministerio de Granaderia, Agricultura y Pesca
MTOP	Ministerio de Transporte y Obras Publicas
NADE	Nomenclatura Arancelaria de Exportaciones
NADI	Nomenclatura Arancelaria de Importaciones
NRT	Net Registered Tonnage
ZTE	Zona de Transbordo Esta
ADB	Asian Development Bank
ALADI	Latin American Association of Integration
BOT	Build Operate Transfer
CIF	Cost Insurance and Freight
DWT	Dead Weight Tonnage
EIRR	Economic Internal Rate of Return
FAO	Food and Agriculture Organization of The United Nations
FIRR	Financial Internal Rate of Return

FOB	Freight on Board
GDP	Gross Domestic Product
GRT	Gross Registered Tonnage
HP	Horse Power
IBRD	International Bank for Reconstruction and Development
IVA	Value added tax
LOA	Length Over All
MHWL	Mean Height Water Level
MLWL	Mean Low Water Level
MWL	Mean water Level
OCC	Opportunity Cost of Capital
PIANC	Permanent International Association of Navigation Congresses
TEU	Twenty Equivalent Unit
USAID	United States Agency for International Development

CURRENCY EXCHANGE RATE

1 US Dollar = 2667 Uruguayan Peso = 130 Japanese Yen

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CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Meaning of the development of the Port of Montevideo

At present, the Port of Montevideo is beginning to undergo a change in its regional trade movement as the result of the treaty concluded by the four countries of Brazil, Argentina, Paraguay and Uruguay on March 26 of 1991. The common market to be established under this treaty provides not only for the free transfer of properties, service and products by the abolition of tariffs and non-tariff barriers, but also the establishment of a common tariff, adoption of policy for macro and sector economy. Great progress in trading activities in this region is expected by these measures.

The river basin, which is comprised of the Parana River and Paraguay River is a great granary from where a large amount of grain is exported worldwide. Ships are used for transportation because they are the most economical for bulk and cargoes with large volumes such as grain. However, since there is limited water depth in both rivers, transshipment from a small vessel to a larger one at the mouth of La Plata River is inevitable for exportation of grain to importing countries such as in Europe. Therefore, the Port of Montevideo, which is located at the mouth of La Plata river, comes before the footlights because of its advantageous location in the region. The Port of Montevideo is able to provide a more economical route for international grain transportation.

However, one big drawback of the Port of Montevideo should be noted. That is the necessity of about a 30 km long channel which is required for the entrance of large vessel to the Port, since the Port is located within the river despite its advantageous location. Substantial funds are necessary to construct and maintain the long channel.

Despite the drawback described above, it is very important to develop the Port of Montevideo as a transportation base for grain in the big surge of trade promotion around La Plata river basin.

Many foreign fishing vessels visit the Port of Montevideo at present. After conducting fishing activities in the South Atlantic Ocean, which reportedly has a plentiful fish resources, they visit the Port not only to transship fishcatch, but also to load water, fuel oil, daily commodities and to exchange the vessel crew. Unfortunately, since there is not a designated facility available for these services in the Port, they encounter difficulties such as being forced to change berths several times. It would be unwise to risk losing these foreign fishing vessels to

other ports by leaving the situation as it is, considering the great profit generated by them.

In this sense, the construction of a foreign fishing terminal is very important.

2. Short term development plan of main port facilities

The plans of the grain terminal and foreign fishing terminal are formulated for the target year of 1998.

(1) Contents of plans

1) Grain terminal

The minimum grain cargo volume at the year of 1998 is estimated at 1.812 million tons of transshipment, 189 thousand tons of export and 12 thousand tons of import. Then, scales of facilities are determined based on the grain cargo volume of 2 million tons. It is assumed that transshipment cargo is transported from/to production area by ship as the cheapest transportation means while export/import cargo is transported from/to domestic production area by truck. The Port of Montevideo provides not only the same transshipment function as that of Alpha zone, 50 Km off the shore of Montevideo port, but also provides storage, taking advantage of its available land area. Objective vessel size for export is assumed to be the panamax type which is popularly used at present, and a new transportation system in which a panamax size vessel can enter the Port and be fully loaded with grain is planned. Grain cargo to be loaded on the panamax-type vessel at the Port of Montevideo is conveyed by 15,000 DWT shuttle-vessels from up-river ports to Montevideo port. A dolphin type loading berth (length 270m, depth -12m), the same type unloading berth (length 170m, depth -9.5m) and a silo (capacity 93,000 tons) are constructed at the transshipment base. Dredging of both basins in front of these dolphins and the long approach channel will be carried out.

The construction site is selected from among 4 candidate sites, existing wharf(A wharf), the inner side of the west breakwater, the north side of the Cintura breakwater and the north side of the Sarandi breakwater(the east side of the port mouth) which were chosen through considering the master plan study and the opinion of Administracion Nacional de Puertos(hereinafter referred to as 'ANP'). The site of the north side of Sarandi breakwater was selected from the economic and technical points of view such as construction cost, future development potential and coordinative condition with other plans.

2) Foreign fishing terminal

The number of foreign fishing vessels arriving in 1998 is estimated at 500. Although this value represents a slightly larger number than in 1991, the number of fishing vessels is not likely to increase much because the fishing area in the South Atlantic Ocean is already fairly exploited and a further increase in fish catch is not expected. These foreign fishing vessels call at the Port to obtain fuel and water, prepare for the next fish catch, exchange or rest crew and to effect ship repairs rather than merely the transshipment of fish catch. As transshipment of fish catch does not necessarily need quaywall, a mooring facility for other activities is planned. Stern mooring is applied for this case. In case of a vessel whose size is more than 1,000 GRT, a part of the general cargo berth is available for its berthing. The objective vessel size is assumed at less than 1,000 GRT. And one berth for alongside mooring is planned additionally. A mooring facility in the shape of the letter "T" composed of a pier of 330 m long and a tip pier of 85m long is planned. The construction site is planned to be located between the second basin and domestic fishing terminal.

(2) Construction cost and period

The construction cost is estimated after the formulation of construction plan and preliminary design based on natural condition data such as geophysical condition and utilization condition. Since the development of grain terminal contains many kinds of construction works, not only construction of berthing facility, but also reclamation and dredging, it takes 4 years for completion. On the other hand, it takes 2 years for construction work of the foreign fishing terminal. Total construction cost is US\$ 94.82 million for grain terminal (Foreign portion of it is US\$ 40.05 million, 42.2% of total.), US\$ 7.56 million for foreign fishing terminal (Foreign portion of it is US\$ 2.89 million, 38.2% of total.). Of the cost of the grain terminal, since expansion of the container terminal is also planned in parallel with it, the cost for dredging of approach channel and common basin to -11m is assumed to be borne by the container terminal.

(3) Management and operation program

There are three alternatives for the construction and management body of grain terminal, (i) ANP itself, (ii) private sector, and (iii) combination of ANP for construction of basic port activities and private sector for construction of equipment and operation. A continuous effort to collect customers and an efficient operation are required for the grain terminal. It is necessary to collect various information related to grain, and a professional know-how to analyze these data is

also required.

Therefore, it is desirable for the private sector, which has much experience in grain handling, to operate the terminal, and the ANP is requested to secure its administrative right without interrupting the activity of the private sector.

The service to be provided at the foreign fishing terminal has been offered by the ANP. Since a large increase in the demand for this service is not expected, the ANP should continue to provide the same service as before.

(4) Evaluation

Comprehensive evaluation is carried out through an economic analysis in which implementation of the project is evaluated from the national economic point of view and through financial analysis in which profitability of the project itself is evaluated.

In an economic analysis, evaluation is carried out by the internal rate of return(EIRR) calculated through a cost benefit analysis. On the other hand, in the financial analysis, we calculated the financial internal rate of return(FIRR) by the discount cash flow method.

1) Grain terminal

The objective of the development of the grain terminal is to make the present grain transportation system in the La Plata river basin more economical. Concerning transportation cargo, the savings in transportation cost and construction cost of transshipment facility for the increase of transshipment cargo volume are assumed to be the benefits. On the other hand, the construction cost, replacement investment cost, maintenance cost, personnel cost and other operation cost are assumed as the cost. As already described, the cost of dredging the approach channel and common basin is assumed as the cost for the part deeper than -11m. The economic internal rate of return is calculated at 11.3 % under the condition that the project life is 30 years. Therefore, it is judged that this project is marginally feasible.

On the other hand, in the financial analysis, the revenue mainly from handling and storing charge is compared with the expenditure composed of construction cost and operation cost. The rate of handling and storing charge of the new terminal is assumed at the level in which the cargo handling at the new terminal is competitive with the transshipment activity conducted in the Alpha zone, analyzing required total transportation cost through the Alpha zone. Based on these conditions, the financial rate of return is calculated at 8.5%. Judging from the fact that the estimated average procurement interest rate is 8.0%, the project

is evaluated at the edge of feasibility. However, considering the possibility of raising the handling and storing charge since the new terminal is located in a fairly advantageous land area (in contrast with the existing transshipment spot, Alpha zone, which is located on the sea), it is judged that the project is fairly profitable.

2) Foreign fishing terminal

The foreign fishing terminal is constructed to improve the situation of foreign fishing vessels which enter the Port of Montevideo. The benefit, which is assumed to be composed both of savings of berth transference of ship and waiting cost and the net product increase of port service industries, is compared with the cost of construction and operation. The economic interest rate of return is calculated at 15.9%, and it is judged that the project is very significant from the national economic point of view. On the other hand, the project preserves profitability with the financial interest rate of return of 8.0% only when the port charge is raised by four times its current level. Since the benefit to the foreign fishing vessels by the project is large, they can pay the increased charges. An alternative, however, to raising the charges by four times would be to revise the port entrance charge and wharfage fee etc.

Recommendations

1. Grain terminal

Although the construction of the grain terminal is judged very significant, it is not an easy project from economic and financial points of view. Thorough preparation and consideration of the following matters are necessary for implementation of the project

(1) The grain terminal is constructed mainly for transshipment of grain which is produced in other countries, and these cargoes do not necessarily need to use this terminal. Therefore, it is imperative to make various efforts to collect a large volume of cargoes and it should be recommended that the commencement of the project is contingent on the solid prospects of attracting cargoes.

(2) Considering ship size trend, it can be said that, in the case of grain transportation, the panamax type vessel conveys a large amount of cargo, and that therefore, it is imperative to provide sufficient facilities for accommodating that

type of vessel. However, since the cost of initial and maintenance dredging of channel and basin is tremendous, the amount of the dredging cost paid by the terminal might debilitate the grain handling business. As the approach channel and common basin are used by container vessels and conventional vessels besides grain carriers, the major portion of the cost above should be paid by facilities other than the grain terminal.

(3) Above all, the know-how acquired through long experience is fundamentally necessary for the business of grain handling. Participation of the private sector which has great experience in this field should be sought by all means. However, since the activity is conducted in the port area, the minimum effort should be made to secure public interest.

(4) Handling of grain cargo, especially loading, is always accompanied by small flying grain particles. At present it is impossible to eliminate this completely. Upon completion of the construction work, the observation of flying particles should be conducted and the countermeasures such as control of handling based on climate condition and planting of trees will be considered, if necessary.

2. Foreign fishing terminal

The foreign fishing terminal project is requested urgently by foreign fishing vessel operators concerned and the construction of it is very significant. The project should be implemented as soon as possible, taking the following into account.

Although the project is highly feasible from the national economic point of view, it is necessary to raise the tariff by four times to preserve profitability in terms of the project itself. It is natural to seek a tariff hike of the fishing terminal under the benefit principle. However, the extent of increase of charge paid by foreign fishing vessels should be reduced through remodeling port entrance charge and wharfage fees for other vessels.

INTRODUCTION

INTRODUCTION

1. Background

The Port of Montevideo, the largest port in Uruguay, is located in the capital of the country. The annual cargo volume handled at the Port exceeded 1.8 million tons in 1989 and it plays a most important role in international trade. At the same time, this port functions as the base port for fishing boats of the countries operating in the South Atlantic Ocean.

Recently, container vessels and foreign fishing vessels have been calling at the Port more frequently than before. Since there is a lack of facilities such as a container terminal with container cranes and a terminal for foreign fishing vessels, the Port is often congested due to the delay of operation. Moreover, the present condition of existing facilities is old fashioned for accommodating these vessels.

On the other hand, there is a new trend related to cargo movement in the La Plata River Basin which covers several neighboring countries; namely, the formation of the treaty for founding a new market called MERCADO COMUN DEL SUR(MERCOSUR). When the treaty is finalized, the custom charge within the region will decrease year by year. As a result, it is expected that the movement of cargoes, especially grain, among related neighboring countries will increase in the future.

Based on the situation described above, the ANP has already formulated a master plan with the assistance of the world bank and also completed the some study of the container berth. Although ANP initiated some of the work deemed urgent in the master plan, most of the work is still left unconstructed since the master plan does not include a concrete construction plan for other main facilities such as a grain terminal, fishing terminal and so on.

Accordingly, the Government of Uruguay has requested the Government of Japan to provide technical cooperation in conducting the feasibility study on main port facilities excluding the container terminal in Montevideo Port.

2. Objectives of the Study

Based on the background described above, the objectives of the study are summarized as follows;

To prepare a feasibility study of the Short Term Development Plan for main port facilities in Montevideo Port for the period up to the year 1998.

3. Method of the Study and Study Schedule

The Study will be carried out according to the flow chart shown in Figure 1 and the each study item will be conducted on the schedule shown in Figure-2.

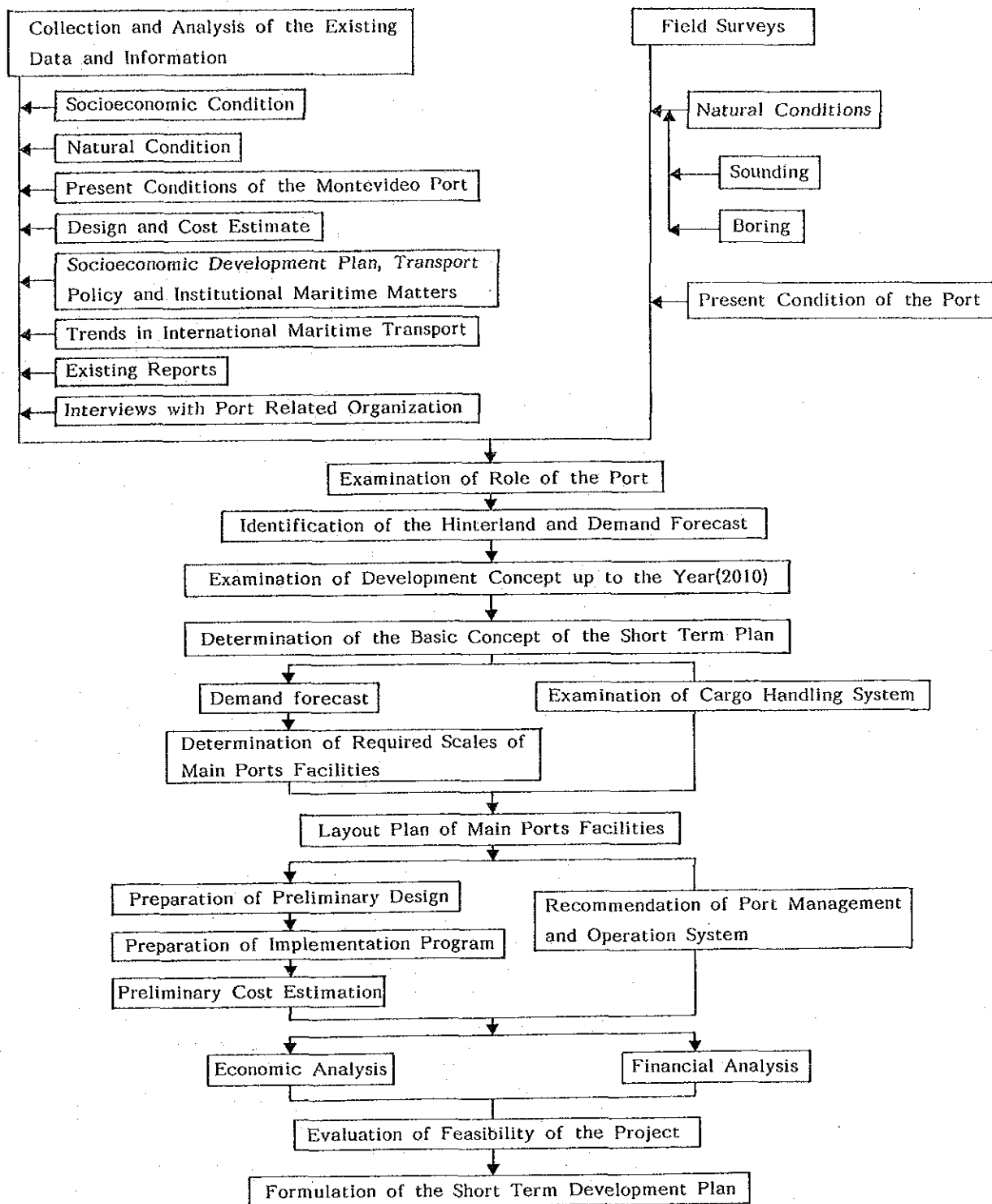
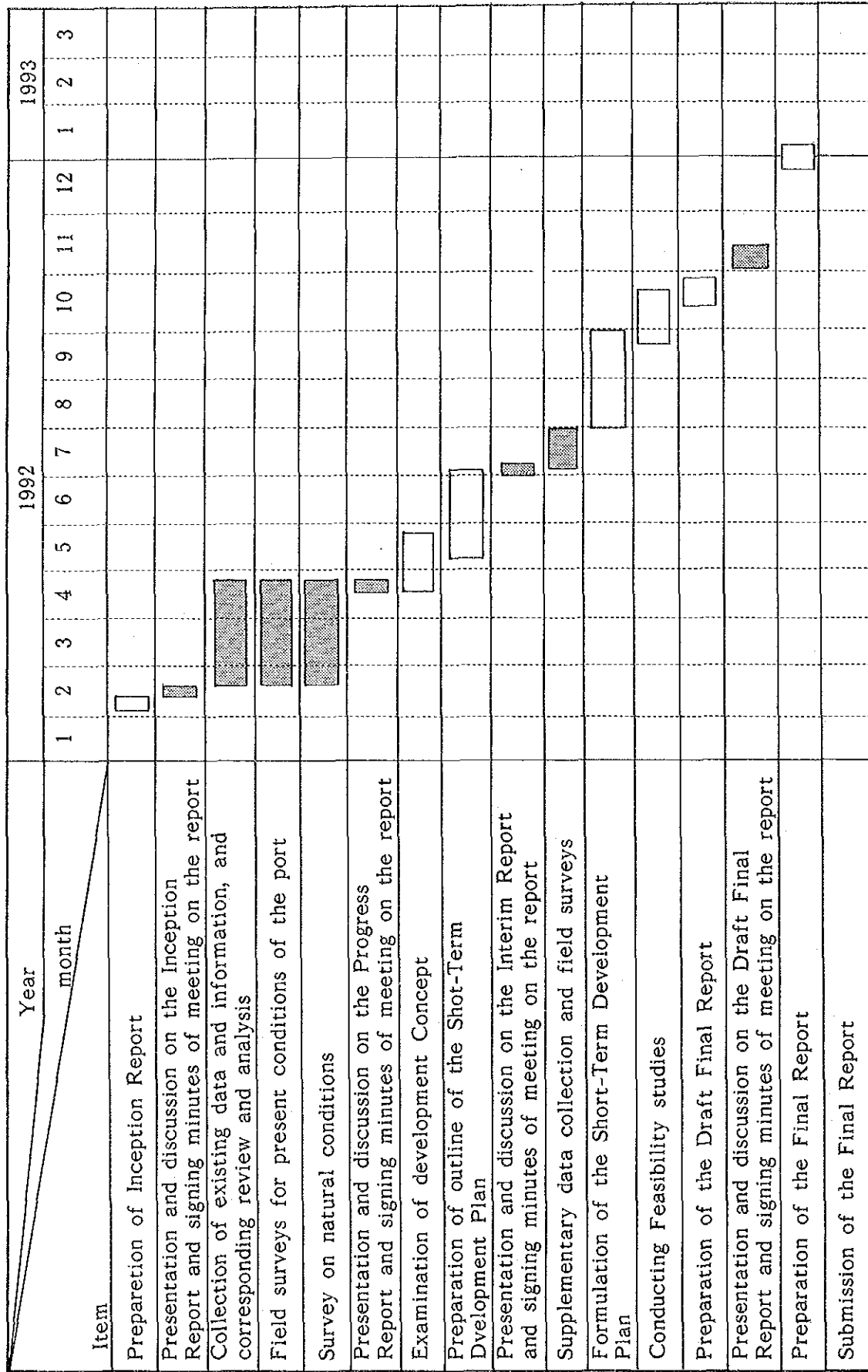


Fig. 1 Flow Chart of the Study





Note:  Study work in Uruguay  Study work in Japan

Fig. 2 Study Schedule

4. Organization of the Study Team

The Study Team consists of eight experts. Their names and responsibilities are listed below.

Name	Responsibility
Jiro Kano	Leader
Hozumi Katsuta	Port Planning
Shozo Goto	Cargo Handling System Planning
Takahisa Aoyama	Demand Forecast/Economic Analysis
Izumi Abe	Management and Operation/Financial Analysis
Shoji Sato	Facility Design/Construction Method/Cost Estimation (Civil Engineering)
Yasuhiro Miyata	Facility Design/Installing Method/Cost Estimation (Mechanical Engineering)
Kiyotaka Sasao	Natural Conditions

I PRESENT CONDITIONS AND FUTURE DEVELOPMENT CONCEPT

1 GENERAL DESCRIPTION OF THE ORIENTAL REPUBLIC OF URUGUAY

1-1 Socioeconomic Activities

1-1-1 Population

Population of Uruguay is shown in Table 1-1-1-1 and Figure 1-1-1-1. Population in non census years is adjusted by that of that census year. A census has been taken three times (1963, 1975 and 1985) in the last 29 years. The population of Uruguay was 2,955,200 in 1985 and it is increasing slightly. Population increased in all departments except Lavalleja between 1963 and 1975. However, population began to decrease in some departments after 1975. Population decreased in several departments, namely Durazno, Flores, Florida, Lavalleja, Rio Negro, Soriano, and Tacuarembó. The population in Lavalleja has continued to decrease since 1963. On the other hand, population has increased in Montevideo, Artigas, Canelones, Cerro Largo, Colonia, Maldonado, Paysandu, Rivera, Rocha, Salto, San Jose and Trinta y Tres. These are located alongside foreign countries or river. Population of Montevideo accounts for almost 40% of the total population in Uruguay. Growth rate of population is 0.59% in Uruguay, while that in Montevideo is 69.53%. These figures show that population is concentrating in the capital city.

Increase and decrease of population by department are shown in Figure 1-1-1-2. White areas indicate an increase in population while black areas indicate a decrease.

Table 1-1-1 Population in Uruguay by Department

Year	Total	Montevideo	Artigas	Canelones	Cerro Largo	Colonia	Durazno	Flores	Florida	Lavalleja
1963	2,595,800	1,202,800	52,800	258,200	71,000	105,300	53,600	23,800	64,000	65,800
1964	2,611,658	1,205,667	53,225	263,817	71,250	105,842	53,775	23,900	64,258	65,750
1965	2,627,717	1,208,533	53,650	269,433	71,500	106,383	53,950	24,000	64,517	65,700
1966	2,643,775	1,211,400	54,075	275,050	71,750	106,925	54,125	24,100	64,775	65,650
1967	2,659,833	1,214,267	54,500	280,667	72,000	107,467	54,300	24,200	65,033	65,600
1968	2,675,892	1,217,133	54,925	286,283	72,250	108,008	54,475	24,300	65,292	65,550
1969	2,691,950	1,220,000	55,350	291,900	72,500	108,550	54,650	24,400	65,550	65,500
1970	2,708,008	1,222,867	55,775	297,517	72,750	109,092	54,825	24,500	65,808	65,450
1971	2,724,067	1,225,733	56,200	303,133	73,000	109,633	55,000	24,600	66,067	65,400
1972	2,740,125	1,228,600	56,625	308,750	73,250	110,175	55,175	24,700	66,325	65,350
1973	2,756,183	1,231,467	57,050	314,367	73,500	110,717	55,350	24,800	66,583	65,300
1974	2,772,242	1,234,333	57,475	319,983	73,750	111,258	55,525	24,900	66,842	65,250
1975	2,788,300	1,237,200	57,900	325,600	74,000	111,800	55,700	25,000	67,100	65,200
1976	2,804,358	1,244,680	59,020	329,460	74,440	111,890	55,640	24,970	67,040	64,830
1977	2,821,680	1,252,160	60,140	333,320	74,880	111,980	55,580	24,940	66,980	64,460
1978	2,838,370	1,259,640	61,260	337,180	75,320	112,070	55,520	24,910	66,920	64,090
1979	2,855,060	1,267,120	62,380	341,040	75,760	112,160	55,460	24,880	66,860	63,720
1980	2,871,750	1,274,600	63,500	344,900	76,200	112,250	55,400	24,850	66,800	63,350
1981	2,888,440	1,282,080	64,620	348,760	76,640	112,340	55,340	24,820	66,740	62,980
1982	2,905,130	1,289,560	65,740	352,620	77,080	112,430	55,280	24,790	66,680	62,610
1983	2,921,820	1,297,040	66,860	356,480	77,520	112,520	55,220	24,760	66,620	62,240
1984	2,938,510	1,304,520	67,980	360,340	77,960	112,610	55,160	24,730	66,560	61,870
1985	2,955,200	1,312,000	69,100	364,200	78,400	112,700	55,100	24,700	66,500	61,500

Year	Maldonado	Paysandu	Rio Negro	Rivera	Rocha	Salto	San Jose	Soriano	Tacuarembó	Treinta y Tres
1963	61,300	88,000	46,900	77,100	55,100	92,200	79,400	77,900	77,000	43,400
1964	62,542	88,875	47,167	77,508	55,533	93,108	80,100	78,125	77,625	43,592
1965	63,783	89,750	47,433	77,917	55,967	94,017	80,800	78,350	78,250	43,783
1966	65,025	90,625	47,700	78,325	56,400	94,925	81,500	78,575	78,875	43,975
1967	66,267	91,500	47,967	78,733	56,833	95,833	82,200	78,800	79,500	44,167
1968	67,508	92,375	48,233	79,142	57,267	96,742	82,900	79,025	80,125	44,358
1969	68,750	93,250	48,500	79,550	57,700	97,650	83,600	79,250	80,750	44,550
1970	69,992	94,125	48,767	79,958	58,133	98,558	84,300	79,475	81,375	44,742
1971	71,233	95,000	49,033	80,367	58,567	99,467	85,000	79,700	82,000	44,933
1972	72,475	95,875	49,300	80,775	59,000	100,375	85,700	79,925	82,625	45,125
1973	73,717	96,750	49,567	81,183	59,433	101,283	86,400	80,150	83,250	45,317
1974	74,958	97,625	49,833	81,592	59,867	102,192	87,100	80,375	83,875	45,508
1975	76,200	98,500	50,100	82,000	60,300	103,100	87,800	80,600	84,500	45,700
1976	78,010	99,030	49,950	82,750	60,930	103,640	88,010	80,480	84,400	45,820
1977	79,820	99,560	49,800	83,500	61,560	104,180	88,220	80,360	84,300	45,940
1978	81,630	100,090	49,650	84,250	62,190	104,720	88,430	80,240	84,200	46,060
1979	83,440	100,620	49,500	85,000	62,820	105,260	88,640	80,120	84,100	46,180
1980	85,250	101,150	49,350	85,750	63,450	105,800	88,850	80,000	84,000	46,300
1981	87,060	101,680	49,200	86,500	64,080	106,340	89,060	79,880	83,900	46,420
1982	88,870	102,210	49,050	87,250	64,710	106,880	89,270	79,760	83,800	46,540
1983	90,680	102,740	48,900	88,000	65,340	107,420	89,480	79,640	83,700	46,660
1984	92,490	103,270	48,750	88,750	65,970	107,960	89,690	79,520	83,600	46,780
1985	94,300	103,800	48,600	89,500	66,600	108,500	89,900	79,400	83,500	46,900

Source: ANUARIO ESTADISTICO 1989 URUGUAY

Census Year

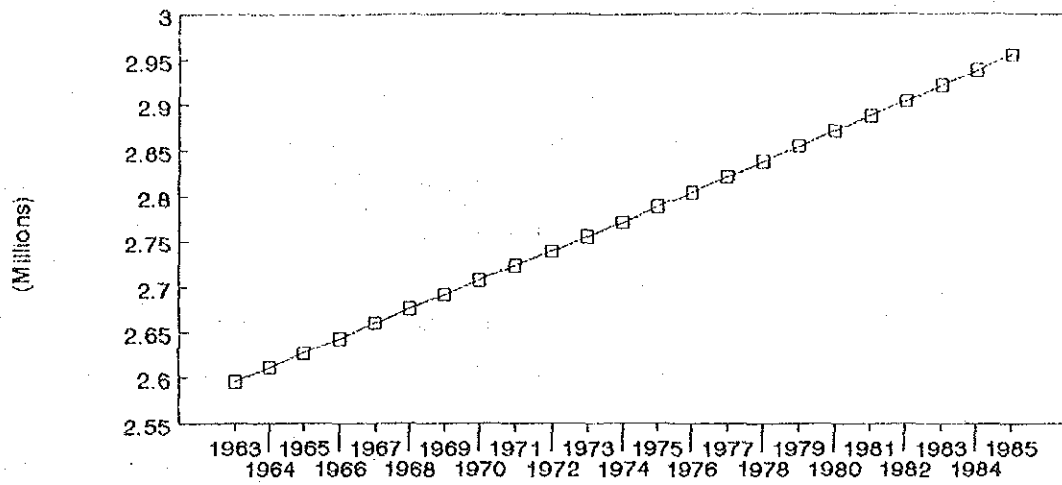


Figure 1-1-1-1 Population in Uruguay

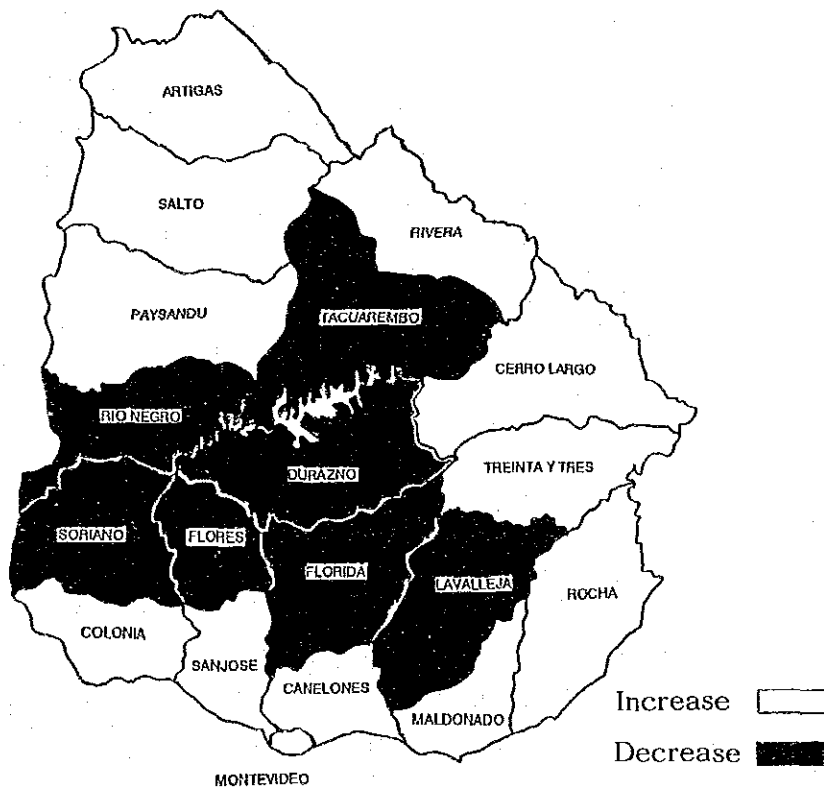


Figure 1-1-1-2 Increase/Decrease of Population by Department in Uruguay

1-1-2 Gross Domestic Product

Gross domestic product is increasing slightly. Growth rate is 2.59% between 1983 and 1990. However, growth rates of some sectors such as Fishery, Quarry and Mining, and Construction were minus during the same period. The fishery sector is in a particularly bad situation, with a growth rate of -8.46%. Agricultural and Live stock sector is increasing very slightly with a 0.4 % growth rate. Growth rates of Manufacturing sector, Electrical Gas and Water sector are 3.01 % and 3.95 % respectively. Growth rate of Transport and Communication sector is 4.29 %.

Table 1-1-2-1 shows gross domestic product by industrial sector in Uruguay.

Table 1-1-2-1 Growth Domestic Product by Industrial Sector

Unit: million N\$ Constant of 1983								
Class of Economic Activity	1983	1984	1985	1986	1987	1988	1989	1990
Agricultural & Live stock	23,028	19,951	22,522	22,080	23,140	22,877	23,124	23,674
Fishery	477	538	539	403	370	262	353	257
Quarry & Mining	511	434	346	404	462	369	371	358
Manufacture	44,474	46,466	45,740	51,108	56,156	55,667	55,560	54,750
Electrical, Gas & Water	5,663	5,613	5,796	6,041	6,837	7,415	6,635	7,426
Construction	7,479	6,496	4,659	4,823	5,956	6,356	6,563	6,165
Commerce	18,899	20,068	21,166	23,122	24,899	24,503	24,075	23,961
Transport & Communication	10,698	10,098	10,595	12,138	12,795	13,434	14,489	14,354
Others	64,188	63,837	64,698	71,535	76,243	75,957	76,687	78,802
Total	175,417	173,501	176,061	191,654	206,858	206,840	207,857	209,747

Table 1-1-2-2 shows share of gross domestic product by industrial sector in Uruguay. Share of Manufacturing sector is the highest, 26 % on average between 1983 and 1990. Share of Agricultural and Live stock sector is second, 11.70 % on average during the same period. Third is Commerce sector where the rate is 11.66 %. Agricultural and Live stock sector have almost the same share as Commerce. Share of these three sectors is half of the total gross domestic product.

Share of Fishery sector is the lowest among industrial sectors with a share of 0.21 %. However, this figure excludes the land-based fishery industry.

Table 1-1-2-2 Share of Gross Domestic Product
by Industrial Sector in Uruguay

Class of Economic Activity	Unit: %								
	1983	1984	1985	1986	1987	1988	1989	1990	Average
Agricultural & Live stock	13.13	11.50	12.79	11.52	11.19	11.06	11.12	11.29	11.70
Fishery	0.27	0.31	0.31	0.21	0.18	0.13	0.17	0.12	0.21
Quarry & Mining	0.29	0.25	0.20	0.21	0.22	0.18	0.18	0.17	0.21
Manufacture	25.35	26.78	25.98	26.67	27.15	26.91	26.73	26.10	26.46
Electrical, Gas & Water	3.23	3.24	3.29	3.15	3.31	3.58	3.19	3.54	3.32
Construction	4.26	3.74	2.65	2.52	2.88	3.07	3.16	2.94	3.15
Comerce	10.77	11.57	12.02	12.06	12.04	11.85	11.58	11.42	11.66
Transport & Comunication	6.10	5.82	6.02	6.33	6.19	6.49	6.97	6.84	6.35
Others	36.59	36.79	36.75	37.33	36.86	36.72	36.89	37.57	36.94
Total	100	100	100	100	100	100	100	100	100

1-1-3 Industrial Structure

Agriculture and live stock breeding is a traditional industry in Uruguay whose share of GDP was 11.3 % in 1990. Main agricultural products are meat, wool, rice, wheat, sorghum, sunflower and citrus. 90 % of exports are agricultural products and related industrial products. Manufacturing accounted for 26.1 % of GDP, and main products are woolen goods and processed leather goods. Paper, glass and chemical products are among the other industrial products. Although Uruguay has not developed marine resources until recent, government is putting a great deal of effort into fishery industry. The fish catch in 1989 increased to about five times of that in 1975.

(1) Agriculture

Agriculture in Uruguay mainly consists of live stock farming, grain production, fruits production and wood production.

Bovine, ovine, horse and others are bred in live stock farming.

Over 700,000 head of bovine were bred in Tacuarembó, Cerro Largo, Paysandu and Durazno in 1988. Over 2,000,000 head of ovine were raised in Artigas, Durazno, Paysandu, Salto and Tacuarembó in 1988. Over 40,000 horses were raised in Cerro Largo and Tacuarembó in 1988. Live stock farming is carried out in every department in Uruguay. Especially in Tacuarembó, Paysandu, Durazno and Cerro Largo, live stock farming is conducted extensively.

Table 1-1-3-1 shows existing ranching of species.

And Table 1-1-3-2 shows export volume of meat and sub-products by freight tonnage.

Almost all the products of wool are exported. Table 1-1-3-3 shows production/export volume of wool.

Table 1-1-3-1 Existing Ranching of Species

Year	Unit:Head		
	Bovine	Ovine	Horse
1980	10,658,300	18,652,700	
1981	11,420,800	20,390,700	
1982	11,236,600	20,306,900	
1983	9,704,300	20,477,200	
1984	9,061,900	20,636,900	
1985	9,370,400	21,195,800	
1986	9,008,800	22,085,100	
1987	9,945,300	24,006,500	437,400
1988	10,330,900	24,689,200	466,300
1989	9,446,200	24,871,600	462,000

Source:MGAP(Ministerio de Ganaderia,
Agricultura y Pesca)

Table 1-1-3-2 Export Volume of Meat and Subproduct

Year	Unit:freight tons						
	Beef	Mutton	Horsemeat	Fowl	Other Meat	Subproducts	Total
1984	96,512	5,355	1,732	3,709	600	40,171	148,079
1985	96,981	5,119	1,723	1,943	754	32,346	138,866
1986	135,531	21,064	1,043	3,554	680	48,898	210,770
1987	57,003	4,449	891	2,117	604	27,399	92,463
1988	80,757	8,062	1,275	2,789	473	45,656	139,012
1989	113,374	17,941	2,595	2,784	306	48,998	185,998

Source:INAC(Instituto Nacional de Carnes)

Table 1-1-3-3 Production/Export Volume of Wool

Unit:tons		
Year	Export	Production
1982	78,204	78,377
1983	71,444	82,000
1984	70,042	81,676
1985	69,736	70,950
1986	98,030	87,178
1987	98,345	90,203
1988	97,010	88,935
1989	74,192	82,741
1990	114,056	97,815

Source:MGAP

Main grain products are rice, wheat, barley, linen, oats, sorghum, sunflower, soy beans and maize. Main grain products are used almost exclusively as feed for livestock except barley and rice. Figure 1-1-3-1 shows cultivation area by grain. Cultivation area of linen is not shown in above figure, because it's cultivation area is very small.

Grains, except rice and soy bean, are cultivated mainly in the west part of Uruguay. Rice is cultivated mainly on the east side of Uruguay, which includes areas such as Maldonado, Lavalleja, Rocha, Treinta y Tres, Cerrolargo, Tacuarembó, Rivera and Artigas. Soy bean is also cultivated on the east side of Uruguay. Table 1-1-3-4 shows main grain production volume.

Between 50 to 70 % of total rice production is exported. Table 1-1-3-5 shows export volume of rice.

Main citrus products are lemon, grape fruit, orange and mandarin orange. Shares of export for production are 21 % for lemon and grape fruit, 39 % for orange, and 16 % for mandarin orange in 1989. Table 1-1-3-6 shows production and export volume of citrus. Table 1-1-3-7 shows share of export for production volume of citrus.

Table 1-1-3-4 Main Grain production Volume

Year	Unit: Ton								
	Wheat	Barly	Linen	Oats	Sorgum	Sun Flower	Soy Beans	Maize	Rice
1980/81	306,577	55,451	21,438	31,643	198,879	44,970	40,000	180,780	330,287
1981/82	387,768	85,277	11,025	20,584	122,887	46,180	28,000	97,324	418,885
1982/83	363,144	45,025	4,695	26,590	106,623	18,771	11,914	103,710	323,116
1983/84	418,728	80,836	7,438	49,865	118,680	25,870	10,924	111,813	339,760
1984/85	348,861	113,270	8,157	48,469	151,593	30,912	21,465	108,635	420,700
1985/86	246,143	79,736	6,807	20,225	104,500	72,200	35,400	103,000	394,218
1986/87	231,730	62,400	5,630	27,583	90,062	47,963	62,050	117,613	335,486
1987/88	307,824	123,800	2,915	58,285	121,183	32,667	72,000	118,330	380,592
1988/89	413,575	203,826	1,554	63,533	78,854	48,401	45,000	60,156	537,217
1989/90	542,378	202,589	1,048	70,001	59,381	28,709	37,050	112,313	347,294
1990/91	415,716	133,097	3,382	51,033	90,215	56,949	18,000	123,747	492,594
1991/92	213,562	159,268							

Source: DIEA (Dirección de Investigaciones Económicas Agropecuarias)

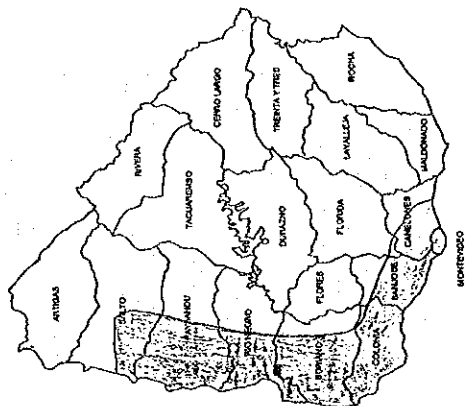
Table 1-1-3-5 Export volume of Rice

Unit: tons	
Year	
1982	245,745
1983	195,964
1984	151,914
1985	241,672
1986	264,999
1987	203,617
1988	270,234
1989	260,345
1990	287,301

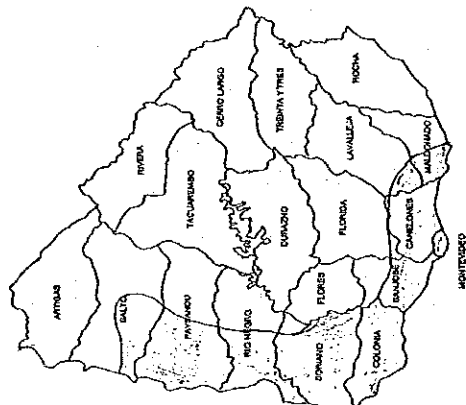
Source: MGAP

Recently, eucalyptus cultivation has begun to mature. Uruguayan government has a plan to further develop eucalyptus cultivation. Eucalyptus is a raw material of paper. Figure 1-1-3-2 shows cultivation area of eucalyptus.

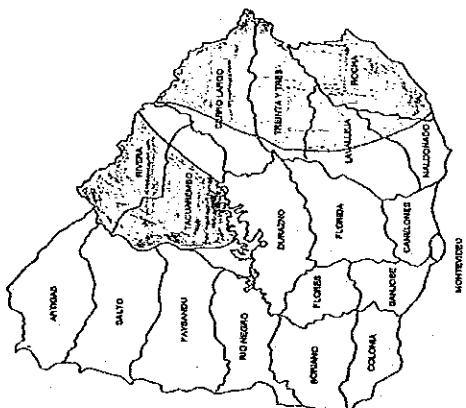
Sunflower



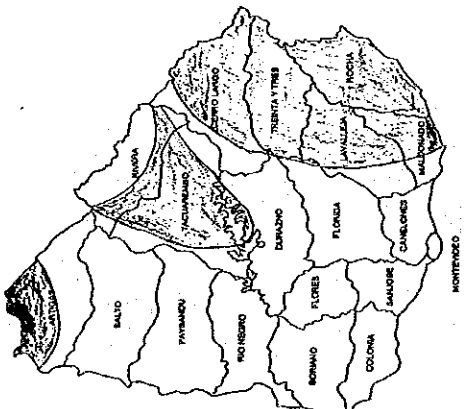
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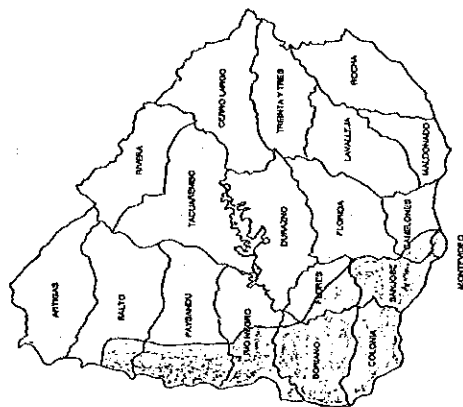
Soy Bean



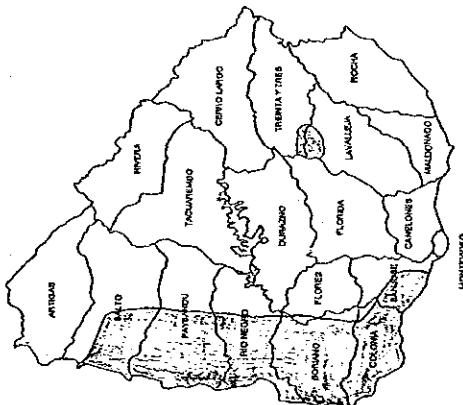
Rice



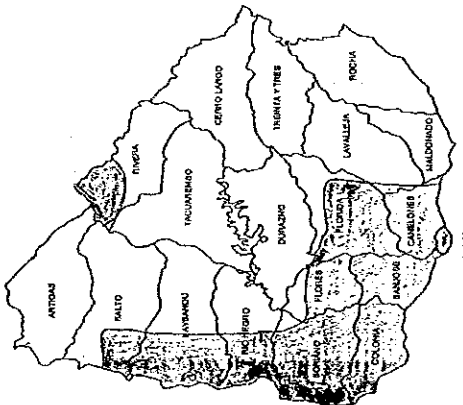
Wheat



Barley



Oats



Sorghum

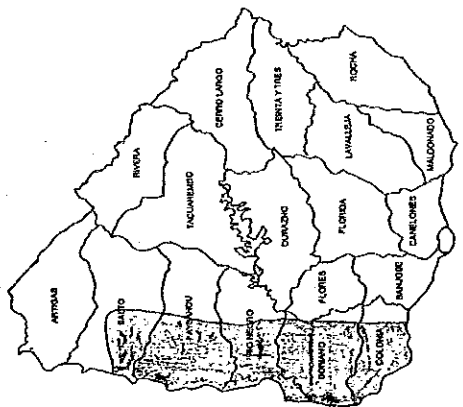


Figure 1-1-3-1 Cultivation Area by Grain Product

Table 1-1-3-6 Production/Export Volume of Citrus

Year		Lemon	Grape Fruit	Orange	Mandarine	Total
1985	Production	34,000	7,500	75,000	36,000	152,500
	Export	16,260	2,306	34,197	6,808	59,571
1986	Production	37,000	7,800	85,000	40,000	169,800
	Export	16,935	2,844	36,229	7,562	63,570
1987	Production	52,152	7,741	78,829	45,153	183,875
	Export	15,518	2,376	32,753	7,750	58,397
1988	Production	46,740	7,579	93,200	36,928	184,447
	Export	10,014	1,639	36,525	5,963	54,141

Source:MGAP

Table 1-1-3-7 Share of Export for Production Volume of Citrus

Year	Lemon	Grape Fruit	Orange	Mandarine	Total
1985	48	31	46	19	39
1986	46	36	43	19	37
1987	30	31	42	17	32
1988	21	22	39	16	29

Source:MGAP



Figure 1-1-3-2 Cultivation Area of Eucalyptus

(2) Fishery industry

1) Fishery industry in Uruguay

Of all industries, the fishing industry has the smallest share in Uruguay. Statistics on gross domestic product show that clearly. Also, fish consumption is very small in Uruguay. Its volume is about 2 % of the total fish catch. However, there are good fishing areas (South-West Atlantic) off the coast of Uruguay. Uruguay has been able to access to a good fishing zone. Uruguay will develop its fishery industry more in the future. There are three main fishing ports, Montevideo, La Paloma and Piria Polis in Uruguay. Uruguayan fishing boats are catching fish in their 200 mile zone and common area of Argentina-Uruguay. These three port locations are shown in Figure 1-1-3-3.



Figure 1-1-3-3 Location of Main Fishery Port in Uruguay

Figure 1-1-3-4 shows fishing area of Uruguay. This Figure comes from Instituto Nacional de Pesca (INAPE).

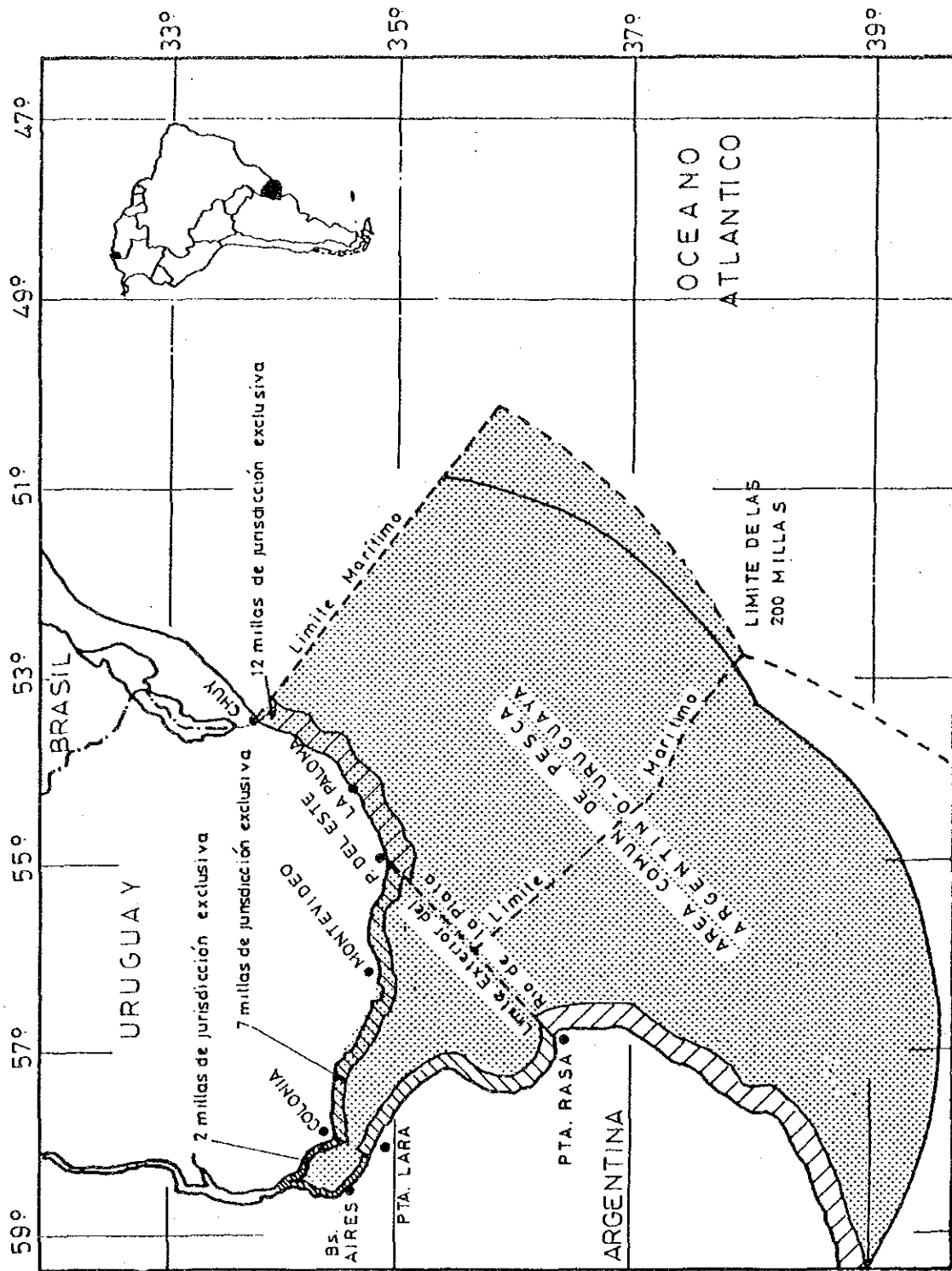


Figure 1-1-3-4 Fishing Area of Uruguay

The Uruguayan fishing fleet consists of 739 vessels of less than 10 GRT engaged in small-scale fishing, 24 coastal fishing boats of up to 100 GRT, and 62 fishing vessels of more than 100 GRT (58 trawlers, one squid-fishing boat and three longline tunafishing vessels) in 1989.

The trawlers usually operate in the Uruguayan fishing zone, with trips lasting between five and 10 days on average.

Registered fishing boat is shown in Table 1-1-3-8 to Table 1-1-3-10.

Table 1-1-3-8 Registered Fishing Boat up to 10 Gross Ton

Year	Number of Ship			Total G.R.T	Total Length	Average GRT	Average Length
	Total	With Motor	No Moto				
1984	592	355	237	926	3,302	2	6
1985	624	376	248	951	3,454	2	6
1986	645	395	250	973	3,567	2	6
1987	659	406	253	994	3,668	2	6
1988	720	454	266	1,055	3,949	1	5
1989	739	471	268	1,113	4,060	2	5

Source:INAPE(Instituto Nacional de Pesca)

Table 1-1-3-9 Registered Fishing Boat 10 to 99.9 Gross Ton

Year	Total Number of Ship With Motor	Total G.R.T	Total Length	Average GRT	Average Length
1984	31	1,536	554	50	18
1985	32	1,615	570	50	18
1986	32	1,669	575	52	18
1987	32	1,669	575	52	18
1988	32	1,680	579	53	18
1989	24	1,308	430	55	18

Source:INAPE

Table 1-1-3-10 Registered Fishing Boat over 100 Gross Ton

Year	Total Number of Ship With Motor	Total G.R.T	Total Length	Average GRT	Average Length
1984	62	16,486	2,207	266	36
1985	66	17,057	2,317	258	35
1986	62	15,811	2,113	255	34
1987	64	16,514	2,206	258	34
1988	66	16,968	2,654	257	40
1989	62	10,681	2,125	172	34

Source:INAPE

The main fishing port is Montevideo (approximately 70 percent of the landings), from which most of the deep-sea and coastal vessels operate. The port of La Paloma (Department of Rocha), 245 km east of Montevideo, has also been acquiring increasing importance since the beginning of the 1980s. It is used by passenger boats as well as by fishing vessels', there are a number of freezing and reduction plants in La paloma port. In 1991, 555 fishing boats and 14 passenger boats entered La Paloma port according to La Paloma port office of MTOP (Ministerio de Transporte y Obras Publicas). Another fishing port of some importance is Piriapolis (Department of Maldonado), 100 km east of Montevideo and there are smaller ports, on which the small-scale fisheries are based, mainly along the coasts of the Department of Canelones and Colonia.

Table 1-1-3-11 shows fish catch volume by port in Uruguay.

Table 1-1-3-11 Fish catching Volume by Port

Year	Total	Unit:Tons				
		Montevideo	La Paloma	Piria Polis	Foreign Ports	Other Ports
1984	134,025	87,201	42,734	964	2,654	472
1985	139,077	99,846	31,462	2,328	4,712	729
1986	141,289	95,877	36,468	6,234	1,917	793
1987	138,020	95,332	32,920	8,380	231	1,157
1988	107,512	76,287	22,144	8,444	450	187
1989	121,887	91,121	22,532	4,598	3,376	260
1990	90,951	67,172	20,035	2,962	541	241

Source:INAPE

In 1990 catches amounted to 90,951 tons. The main species caught was hake(Merluza), 55,751 tons, or 61 percent of the total catch. Then came white croaker (corvina), 17,488 tons, or 19 percent of the total, and striped weakfish (pescadilla), 5,665 tons, or 6 percent of the total. The rest of the catch consisted of squid (calamar), anchovy (anchoita), tuna and dogfish.

Fish catch by main species is shown in Table 1-1-3-12.

Table 1-1-3-12 Catching Fish by Main Species

Year	Unit:tons						
	Hake	White Cr.	Weakfish	Squid	Anchovy	Others	Total
1984	65,051	24,246	10,938	2,743	15,525	15,522	134,025
1985	97,150	19,324	7,322	333	0	14,948	139,077
1986	86,213	24,393	12,894	2,061	354	15,374	141,289
1987	83,693	28,173	10,703	2,603	457	12,391	138,020
1988	60,736	25,915	6,847	3,642	601	9,788	107,529
1989	69,329	23,993	10,962	6,002	25	11,576	121,887
1990	55,751	17,488	5,665	622	7	11,418	90,951

Source:INAPE

White Cr.:White Croaker

In 1989, almost 100 percent of the total catch was sent for processing for human consumption and the remainder for reduction. The catch processed gave a production yield of 50 percent, frozen products accounting for the major share (85 percent of the output). Table 1-1-3-13 shows fish catch volume by processed condition.

Table 1-1-3-13 Catching Fish volume by Processed Condition

Year	Unit:Tons					
	Total	Fresh	Frozen	Salt/Can	Reduction	Others
1984	134,025	10,219	106,672	302	16,831	1
1985	139,077	13,902	124,021	328	796	30
1986	141,289	14,251	125,476	202	1,333	27
1987	138,020	13,702	122,431	177	1,710	0
1988	107,529	9,623	95,932	105	1,869	0
1989	121,887	18,259	102,991	19	618	0
1990	90,951					

Source:INAPE

In 1990, 26 companies exported fishery products. More than 30 plants, large and small, are authorized by INAPE to process fish. Although some of the plants produce a variety of items, more than 80 percent concentrate on frozen fish. Next in importance is fresh fish. There are also plants that produce meal, pickled, salted, dried, smoked and cooked fish, and protein concentrates

Table 1-1-3-14 shows share of export volume and domestic consumption.

Table 1-1-3-14 Share of Export Volume/Domestic Consumption

Year	After Pr.	Export	Domestic	Unit:tons	
				Export %	Domestic %
1984	62,965	58,999	3,966	94	6
1985	68,811	68,309	502	99	1
1986	77,235	74,604	2,631	97	3
1987	71,801	62,496	9,305	87	13
1988	61,580	57,104	4,476	93	7
1989	67,052	59,385	7,667	89	11
1990	47910	41,664	6,246	87	15

Source:INAPE

After Pr.:Obtained Volume after Processed

In terms of export figures, it has experienced spectacular growth (rising from US\$ 3.4 million in 1975 to US\$ 60.8 million in 1990, with a high of US\$ 83 million in 1987). Within Uruguay's economy as a whole, however, it has not exceeded 1 percent of GDP. As regards employment, in 1990 the primary fishing sector employed 3,321 people and the processing sector 6,189 people.

Table 1-1-3-15 shows employment of fishery industry in Uruguay.

Table 1-1-3-15 Employment of Fishery Industry

Year	Total	Processed	Ship
1984	8,879	6,139	2,740
1985	10,086	7,197	2,889
1986	10,414	7,534	2,880
1987	10,990	7,936	3,054
1988	10,299	7,055	3,244
1989	9,510	6,189	3,321

Source:INAPE

2) General Situation of the Atlantic Southwest Fishery

The foreign fishing vessels visiting the port of Montevideo are assumed to conduct fishing activities in the sea area called the Atlantic Southwest. According to FAO's report, this area is shown as follows:

The Atlantic Southwest covers the coast of Argentina, Uruguay and Brazil. The continental shelf is fairly wide off northern Brazil, narrows off Brazil's eastern coast, and widens again off Uruguay and the Plate estuary to around 200 miles off Patagonia. The rough seabed off northern and central Brazil makes deep-sea trawling difficult, and catches are low along most of the Brazilian coastline, except around the mouth of the Amazon. Fisheries are more plentiful in southern Brazil, Uruguay, around the mouth of Plate and further south in the cold waters of the Malvinas (Falklands) current.

The catch more than doubled in this area between 1975 and 1986 from 823,000 tons to 1,710,000 tons. This was due to the expansion of fishing activity in all three coastal countries, but in particular to the growing presence of deep-sea trawlers and jiggers from outside the region, notably from the USSR, Japan and Poland. Fishing by boats from outside the region accounted for 30% of the catch in 1986, compared with 11% in 1980 and only 2% in 1975.

Traditionally one of the most important catches has been for Argentine hake, fished mainly by Argentine and Uruguayan fleets. Sardinella is caught off the central Brazilian coast. The Soviet and Polish fleets have greatly increased the catch for southern blue whiting, concentrated mostly on the Patagonian shelf and slope around the Malvinas (Falkland) Islands. There has also been a substantial increase in the catch for squid by both Argentine fleets and boats from outside the region in the area stretching south from the Plate estuary to the Malvinas (Falklands).

Table 1-3-1-16 Atlantic Southwest Catches by Species and Countriesa

Unit: 1,000ton

	1970/74	1975/79	1980	1981	1982	1983	1984	1985	1986
Demersals	251	474	598	611	665	771	540	600	640
-hake	153	316	355	327	360	348	262	372	377
-whiting	0	11	78	70	137	258	113	95	104
Pelagics	196	156	157	153	120	173	174	148	160
-sardinella	164	136	146	112	99	139	137	124	130
Crustaceans	50	54	49	49	62	70	83	79	77
Squid	4	43	31	54	208	205	252	270	303
Total	846	1,092	1,186	1,180	1,419	1,561	1,450	1,569	1,710
Argentina	249	376	377	352	459	402	305	397	412
Brazil	551	577	547	558	525	549	625	628	633
Uruguay	16	58	120	147	119	144	134	138	141
Others	33	53	142	123	316	466	386	406	524

Source: FIDI/FISHDAB

1-1-4 Trade

Trade balance had been in the red until 1982. However, the big devaluation of the Uruguayan currency at the end of 1982 and domestic recession produced a sharp reduction in imports in 1983. Consequently, the trade balance went into the black in 1983 after an interval of 10 years, and trade balance has continued to be in the black.

In 1990, exports grew 6.7 % over the previous year, accounting to US\$ 1,702,392 thousand. Trade balance (US\$ 357,759 thousand) was highest in 1989. Trade balance of 1990 was also good, and amounted to US\$ 291,437 thousand.

Main export commodities are traditional products such as meat, wool and leather and other products such as rice, dairy products, fishery products and textile. Countries for exporting are Brazil, United State, Germany, Argentine, China and so on.

Main import commodities are petroleum, machinery, chemical products, transportation machinery and so on. Main importing countries are Brazil, Argentine, United State, Germany and Mexico etc.

Table 1-1-4-1 shows transition of trade in Uruguay. Values of export and import are shown in FOB and CIF, respectively.

Table 1-1-4-1 Transition of Trade

Unit: thousand US\$

Year	Export	Import	Balance
1980	1,058,549	1,680,346	(621,797)
1981	1,215,375	1,641,120	(425,745)
1982	1,022,886	1,057,863	(34,977)
1983	1,045,100	705,620	339,480
1984	928,906	785,831	143,075
1985	852,352	707,077	145,275
1986	1,087,455	869,980	217,475
1987	1,191,084	1,141,891	49,193
1988	1,394,616	1,176,949	217,667
1989	1,596,082	1,238,323	357,759
1990	1,702,392	1,410,955	291,437

Source:Uruguay import-export statistic
():minus

1-2 Transportation

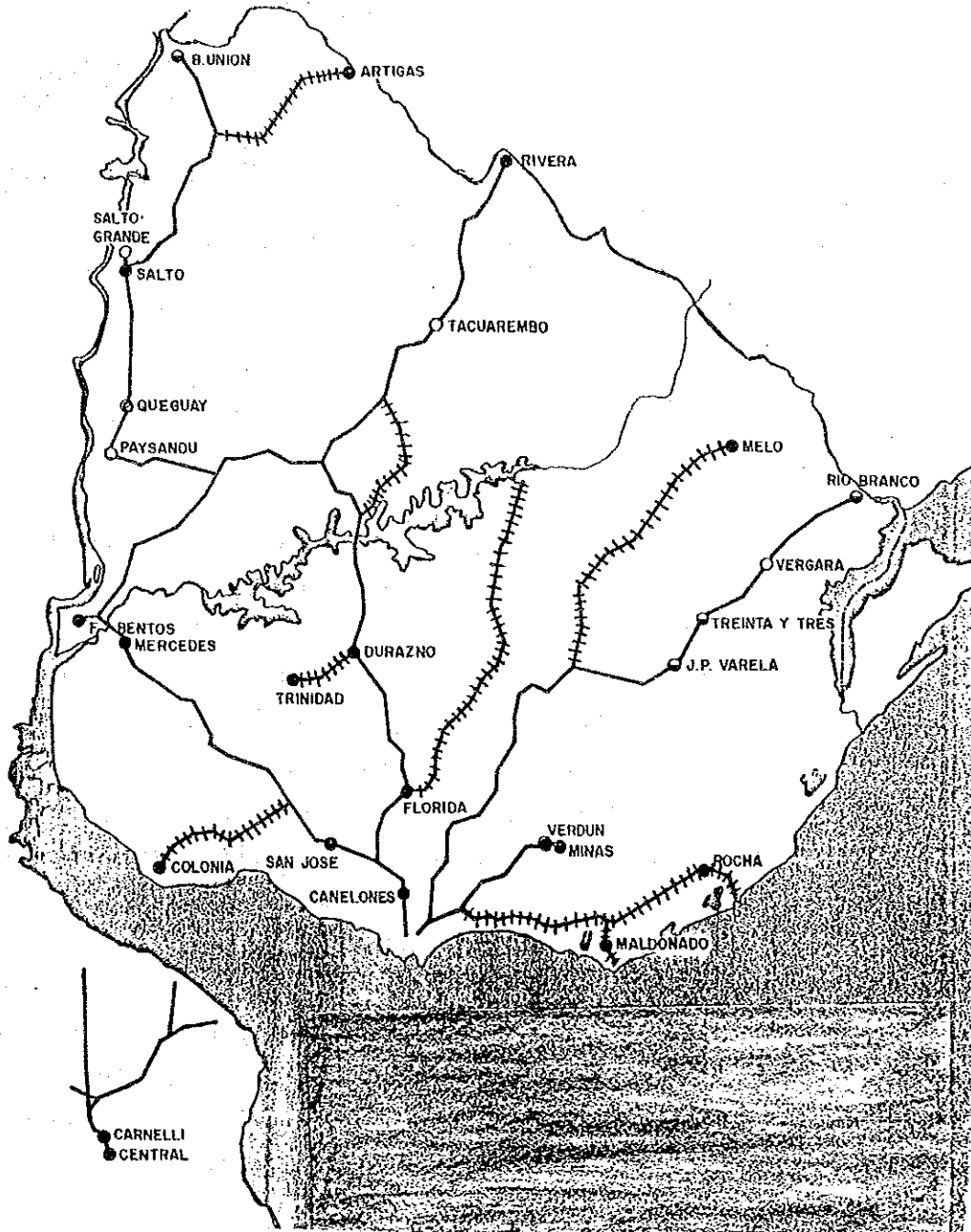
There are four types of transportation in Uruguay, air transportation controlled by Ministry of National Defense (Ministerio de Defensa Nacional), railway transportation controlled by AFE (Administracion de Ferrocarriles del Estado), road transportation controlled by DNV (Direccion Nacional de Vialidad) and marine transportation controlled by both MTOP and ANP. General conditions of railway and road are described in this chapter.

1-2-1 Railway

Uruguayan railway transportation started in 1853 by private sector. Uruguayan government nationalized the railway in 1948. Since 1970, the Uruguayan government has continued its effort to modernize trains and improve railroad and its facilities. However, the government has some old trains and facilities even now.

Railway network covers all of Uruguay, and two lines connect to Brazil and one line to Argentina. Total railway length is 3,002km and width of rail is 1.435m. Government plans to be abolish some of the existing rail roads. Only international lines will be retained. Figure 1-2-1-1 shows railway network and lines to be abolished.

+++++ Lines to be Abolished



Source: MOP (Ministerio de Transporte y Obras Publicas)

Figure 1-2-1-1 Railway Network and Plan of Abolition Lines

Transportation volume in last six years is shown in Table 1-2-1-1. Cargo handling volume had decreased till 1985, but from 1986, cargo handling volume has continued to increase slightly. AFE stopped passenger services in 1988.

Table 1-2-1-1 Transportation Volume of Railway

	Unit:Thousand					
	1983	1984	1985	1986	1987	1988
Cargo Handling Volume (Ton)	900	1,000	800	900	900	1,000
Transpotation Volume (Ton/Km)	202,000	252,900	174,200	199,100	209,000	210,700

Source:AFE

1-2-2 Road

Government constructed roads alongside the railway in order to avoid monopoly of railway. Therefore, road condition is comparatively good. Paved roads amount to 70 % of total road length (9,510 km). Roads branch out to every department from Montevideo where the traffic is heavy, and connect each country site where the traffic is light. Heavy traffic routes are number one, five, eight, nine and three by order. Figure 1-2-2-1 road network.

Government plans to expand lane of route number one.

Export cargo volume through the road was about 566,000 tons in 1990. This volume is over the export cargo handling volume of Montevideo Port. Export/import cargo volume through the road was 60 % of total cargo handling volume at Montevideo Port in 1990. 70 % of export/import cargo through the road was carried to/from Brazil, and 24 % to/from Argentina. Table 1-2-2-1 shows cargo export/import through road. These volumes have increased slightly. In particular, cargoes across the Fray Bentos have increased steadily.

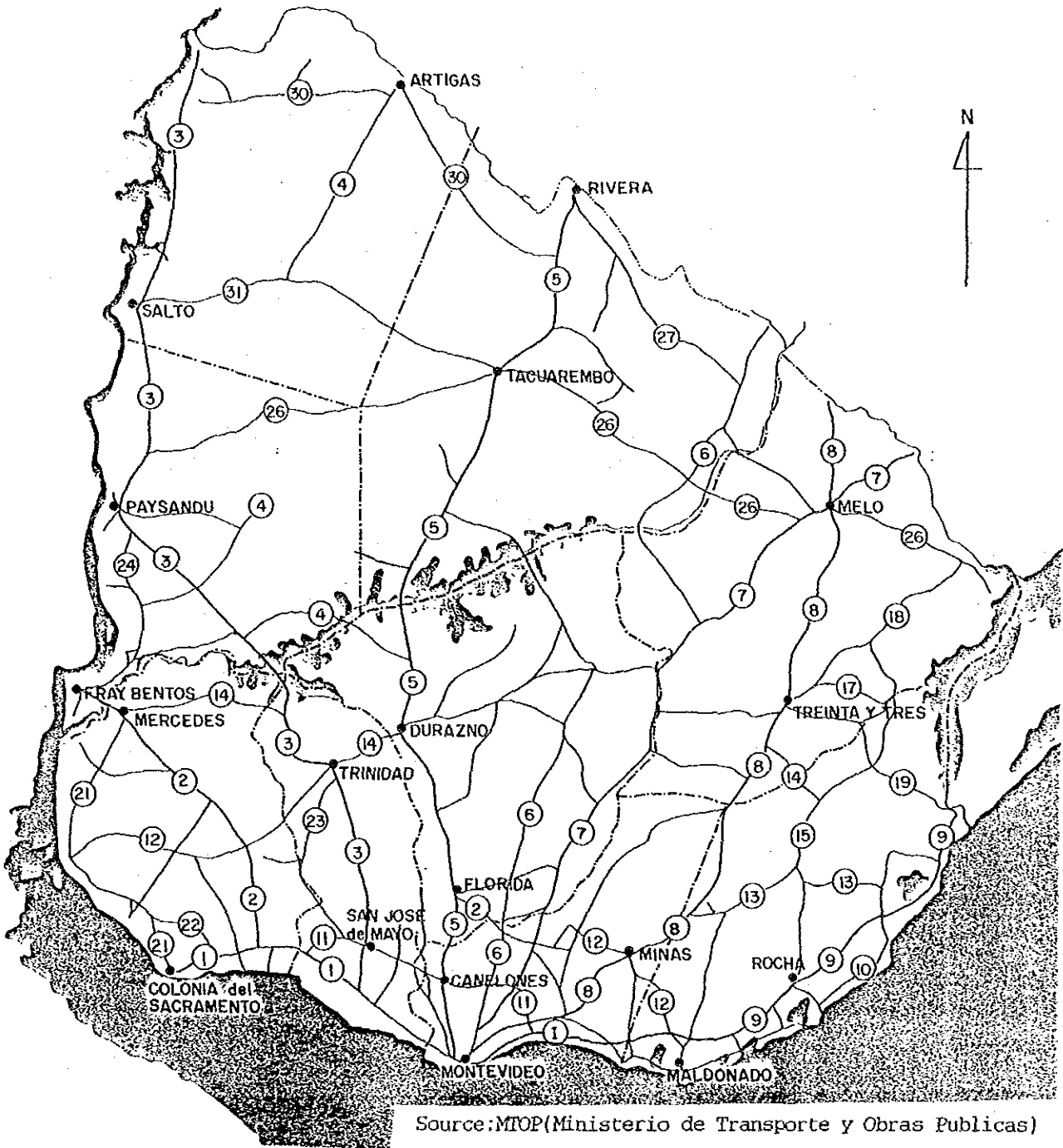


Figure 1-2-2-1 Road Network

Table 1-2-2-1 Cargo Export/Import through Road

Unit: Thousand tons

	Colo- nia	Fray Bento	Pay sandu	Salto	Bella Union	Rivera	Ace- gud	Rio B- ranco	Chuy	Total
1985 Export	42	12	2	0	0	83	0	49	59	247
Import	18	80	3	0	3	35	0	62	68	269
Total	60	92	5	0	3	118	0	111	127	516
1986 Export	62	17	3	0	0	93	3	139	157	474
Import	11	104	4	0	2	32	0	70	88	311
Total	73	121	7	0	2	125	3	209	245	785
1987 Export	57	16	9	1	0	51	0	82	87	303
Import	11	128	4	2	2	29	0	79	124	379
Total	68	144	13	3	2	80	0	161	211	682
1988 Export	49	20	4	1	0	68	-	80	98	320
Import	17	104	9	5	2	29	-	71	141	378
Total	66	124	13	6	2	97	0	151	239	698

Source: DNT (Direccion Nacional de Transporte)

1-3 Main Development Policy

1-3-1 Development of River Way (Hidrovia)

Main contents of Economic Feasibility Study of Paraguay-Parana River Way (Hidrovia) are as follows:

(1) Scope of the Study

Paraguay-Parana River Way comprises a continuous river area that begins at the port of Caceres in Brazil and ends at the mouth of the River of La Plata, which runs through rivers of Paraguay and Parana, including the port of Nueva Palmira in Uruguay. Two target years, 1995 and 2000 were established.

(2) Main Conclusions

- 1) The regions surrounding the river way complement each other to form a unified area, by which economic activities can be cultivated through integrated action.
- 2) The river transport in Paraguay-Parana has a poor level of efficiency. Transport volume has stagnated or declined in some parts, recently. This low efficiency is caused by a number of factors, especially inadequate treatment of river transportation and the lack of institutional assistance.
- 3) The river way can be an extremely positive factor as a infrastructure for assistance of economic activity and also a factor for execution of actions in this plan from coordination participation in investment to its operation in the river navigation.
- 4) The river way, at present, forms an important transportation means which promotes exchange among five countries and export to other countries.
- 5) The natural conditions of the Parana River and Paraguay River are good and allow for more than 3,400 km of continuous navigation. The restriction in draft is limited to some months and critical years.
- 6) The existing fleets and available port facilities along the river have capacities for treating actual cargo flow. However, there are some inadequacies in some parts of the river at particular points of time.
- 7) The study on economic potential of the area influenced by river way shows that cargo flows are forecast between 14.5 and 18.5 million tons in 1995, and between 15.9 and 21.6 million tons in 2000.

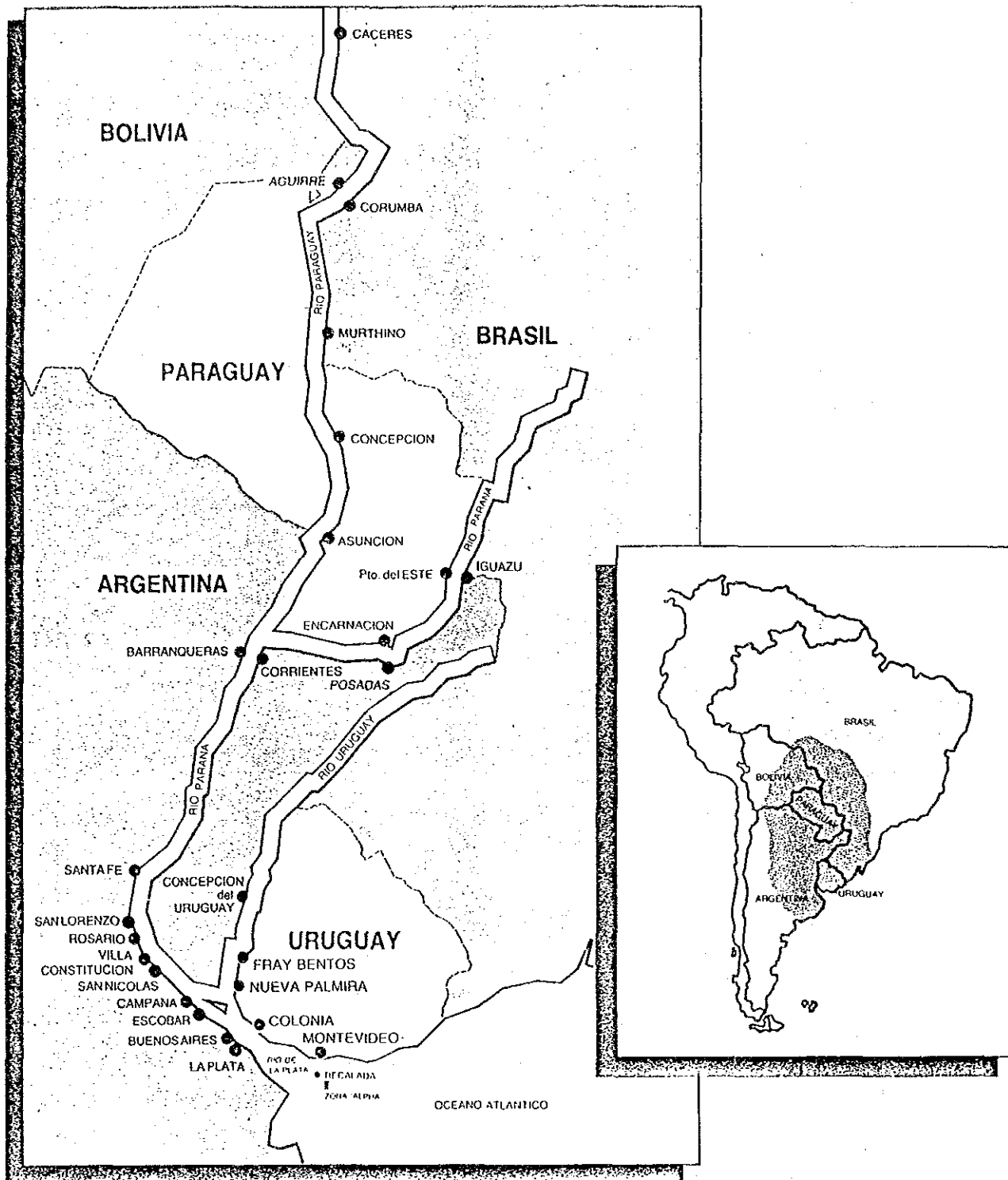


Figure 1-3-1-1 HIDROVIA PARAGUAY-PARANA

8) It is possible to execute the improvement work of the channel, by which big convoys with 3.0 m draft can pass, under condition of cargo volume described above. Internal rates of return calculated under both conditions, i.e., Natural Integration Scenario and Intentional Integration Scenario are 18%, 26%, respectively.

9) Besides economic feasibility, this project brings innumerable indirect benefits in social and economic aspects.

(3) Navigation Plan

The draft will be secured at -3m up to the year of 2000. The stage plan is shown as follows:

Table 1-3-1-1 Conditions of Navigations in 1990

Section	(A)	(B) (m)	(C)	Maximum Convoy Admitted		Convoy Type Considered for Section			Observation
				(1) (m)	(2) (m)	(3)	(4)	(5) (t)	
				Nueva Palmira - Access Santa Fe	12	3.0	0	300	
Access Santa Fe - Asuncion	12	2.7	0	300	50	A	16	20,600	
Asuncion - Poz del Apa	6	1.8	3	280	38	B	12	8,400	Section without dredging
Poz del Apa - Corumba	6	2.7	0	280	38	A	12	15,500	Average year condition
Corumba	12	2.7	1	280	38	A	12	15,500	
Corumba Pta. Do Morro	6	2.1	3	220	38	B	9	8,000	Dry year condition
Pta. Do Morro Caceres	6	3.0	0	220	38	B	9	13,500	
Pta. Do Morro	6	1.5	10	150	24	C	4	2,040	20% reduction of
Caceres	6	2.1	6	150	24	C	4	3,560	Velocity by curve

Note: (A) - Navigational Months for Year (Average)

(B) - Garantied Depth

(C) - Number of Cutting

(1) - Length

(2) - Breadth

(3) - Type of Pusher Barge

Type	Length (m)	Width (m)	Draft (m)	Pillar (m)	Power (HP)
A	40	12	2.4	3.0	5,000
B	30	12	1.8	3.0	2,500
C	30	12	1.5	3.0	1,000

(4) - Number of Barge

(5) - Maximum Capacity in ton

Table 1-3-1-2 Conditions of Navigation in 1995

Section	(A)	(B) (m)	(C)	Maximum Comboy Admitted		Convoy Type Considered for Section			Observation
				(1) (m)	(2) (m)	(3)	(4)	(5) (t)	
Nueva Palmira - Asuncion	12	3.0	0	300	50	A	16	24,000	
Asuncion - Corumba	12	2.4	0	280	38	A	12	13,100	
Corumba - P. Do Morro	12	2.7	0	220	38	B	9	11,600	
P. Do Morro - Caceres	12	2.1	5	220	24	C	6	5,300	Velocity reduction of 10% by curve

Note: (A) - Navigational Months for Year (Average)

(B) - Garantied Depth

(C) - Number of Cutting

(1) - Length

(2) - Breadth

(3) - Type of Pusher Barge

(4) - Number of Barge

(5) - Maximum Capacity in ton

Table 1-3-1-3 Conditions of Navigation in 2000

Section	(A)	(B) (m)	(C)	Maximum Comboy Admitted		Convoy Type Considered for Section			Observation
				(1) (m)	(2) (m)	(3)	(4)	(5) (t)	
Nueva Palmira - P. Do Morro	12	3.0	0	300	50	A	16	24,000	
P. Do Morro - Caceres	12	3.0	0	220	24	B	9	13,500	Velocity reduction of 10% by curve

Note: (A) - Navigational Months for Year (Average)

(B) - Garantied Depth

(C) - Number of Cutting

(1) - Length

(2) - Breadth

(3) - Type of Pusher Barge

(4) - Number of Barge

(5) - Maximum Capacity in ton

(4) Present Condition of Progress

At first, it was scheduled that the plan would be agreed upon by October, 1991. It is now under negotiation. After the agreement is made, an office for implementation will be established in Buenos Aires. This office will analyze and identify physical constraints, and prepare terms of reference of necessary works to be done. These works will include dredging, port construction and improving navigational conditions. Practical construction work will be begun at the beginning of 1994.

1-3-2 Establishment of Common Market of South (MERCOSUR)

(1) Content of the Treaty

Four countries of Brazil, Argentina, Paraguay and Uruguay concluded the treaty for establishing a common market of South America on March 26, 1991. The Government of Uruguay got approval from the Diet and ratified the treaty on 22nd of July. This treaty, Treaty of Asuncion(Tratado de Asuncion), came into effect on 29th of November, 1991. The contents of it are as follows:

- 1) The common market will be established by the end of 1994. The name of the market is MERCADO COMUN DEL SUR (Abbreviation: MERCOSUR).
- 2) The common market means not only free transfer of properties, service and products by the abolition of tariff and non tariff barrier, but also establishment of outside common tariff, adoption of common trading policy for outside countries or regions, cooperation of policy for macro and sector economy, and harmony of law system.
- 3) The schedule of reduction of inside tariff was determined as follows:

Year	91		92		93		94	
	6/30	12/31	6/30	12/31	6/30	12/31	6/30	12/31
Rate of Reduction	47	54	61	68	75	82	89	100

The schedule of reduction of tariff for commodities for which ALADI's (Latin American Association of Integration) preferential tariff has been applied was determined, separately.

- 4) The number of protective commodities for which reduction of inside

tariff is not applied is determined as follows: Argentina 394, Brazil 324, Paraguay 439, Uruguay 960. For these commodities, both Brazil and Argentine exclude 20% of them from protective commodities every year end from December 31, 1990 to 1994, and both Uruguay and Paraguay exclude 10% of them after the effectuation of the treaty, 10% at the end of 1991 and 20% every year end from 1992 to 1995.

5) Regulations for the place of origin, settlement of dispute and safe-guard to be applied for switching period were provided in the attached document, separately.

6) The council of common market and the group of common market are established as organizations of MERCOSUR. The council of common market, as the supreme organization of MERCOSUR, implements policy regulated by this treaty, and makes a decision for creation of the market. It is composed of both foreign ministers and economic ministers of affiliated countries, and is held at least once a year with the presence of the president. The group of common market is a standing implementation body which is composed of representatives of each foreign ministry, economic ministry and central bank. The office for administration is placed in Montevideo. And 10 sub-groups are determined to examine policy coordination of macro and sector economy under this group.

(2) Present Conditions of Progress

The first council of common market was held December, 1991. However, the office of administration for the group of common market is not established yet.

2 NATURAL CONDITIONS

This chapter presents an outline of the natural conditions in Montevideo Port and the nearby areas based on the reports related to "Master Development Plan of Montevideo Port" described by the Consultant "INTECSA", adding some analysis of data and information collected and the results of sounding and soil investigation carried out in this investigation.

2-1 Topography

Montevideo is situated at the east side of the mouth of La Plata River as shown in Figure 2-1-1, which suffers from the considerable amount of longtime river-borne sediments discharged from the upper reaches. Montevideo Bay is shaped as an ellipsoid of 4.5 Km X 3 Km and is shoaling due to the sediments in less than 3 meters in depth. Materials sedimented at the seabed are several microns of mud and suspended easily by wave and tidal action. Several rubble mound breakwaters function to prevent the Montevideo Port from the shoaling in addition to waves as shown in Figure 2-1-2. Ship basins thereof are maintained about -10 meters in depth by dredging.

The approach channel of 33 km long runs from the mouth of port, of which the part near to the mouth with about 6.5 km length is called N-S channel, then the curved part continues for 4.5 km, and the remaining part is called W-E channel.

The bottom configuration of inner basin is shown in the sounding chart of Figure 2-1-3, which has been compiled by combining the result of sounding in this study and another sounding chart covering surrounding areas which were reported by E.I.H. Grimaux in 1987.

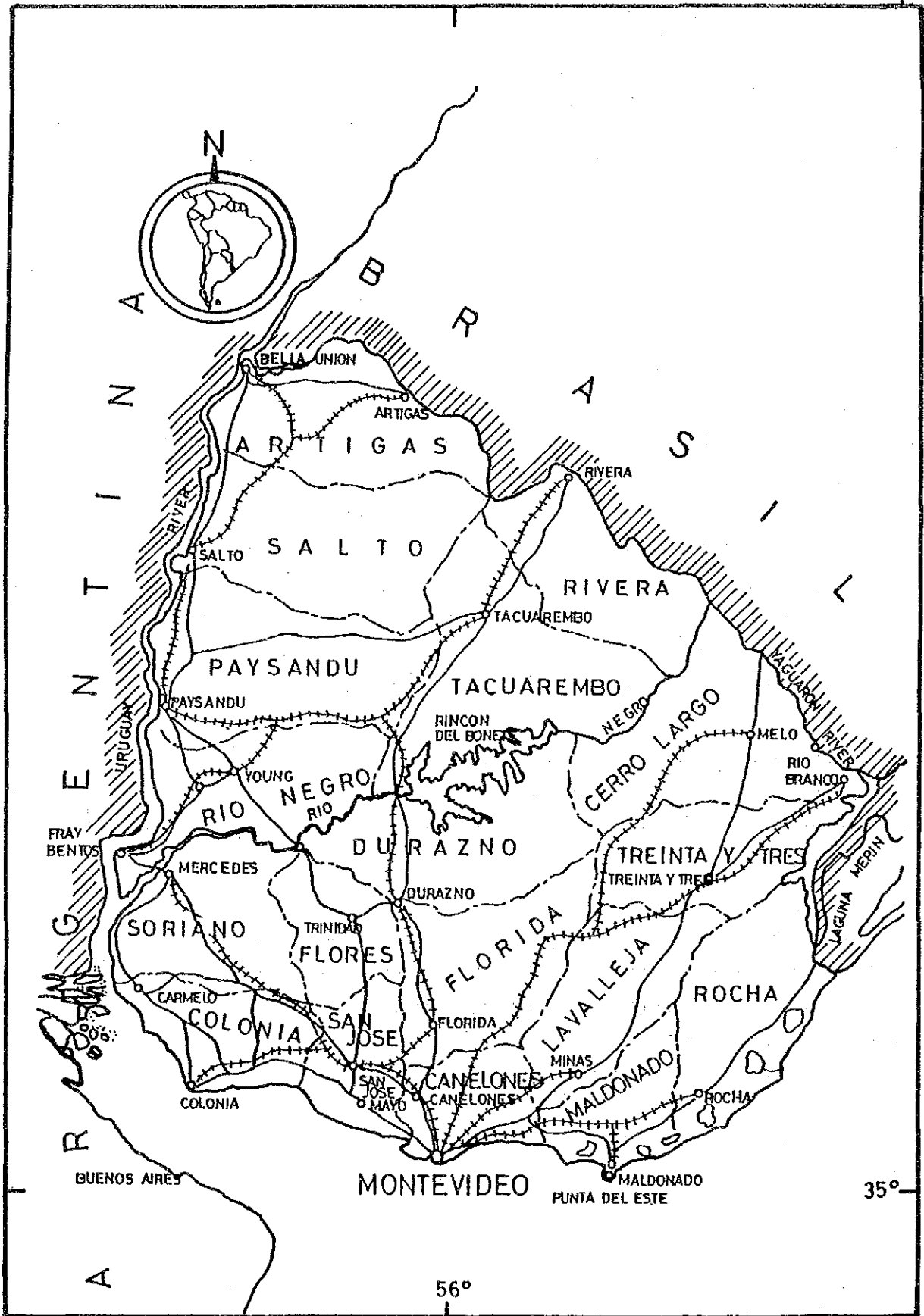


Figure 2-1-1 Location Map of Montevideo

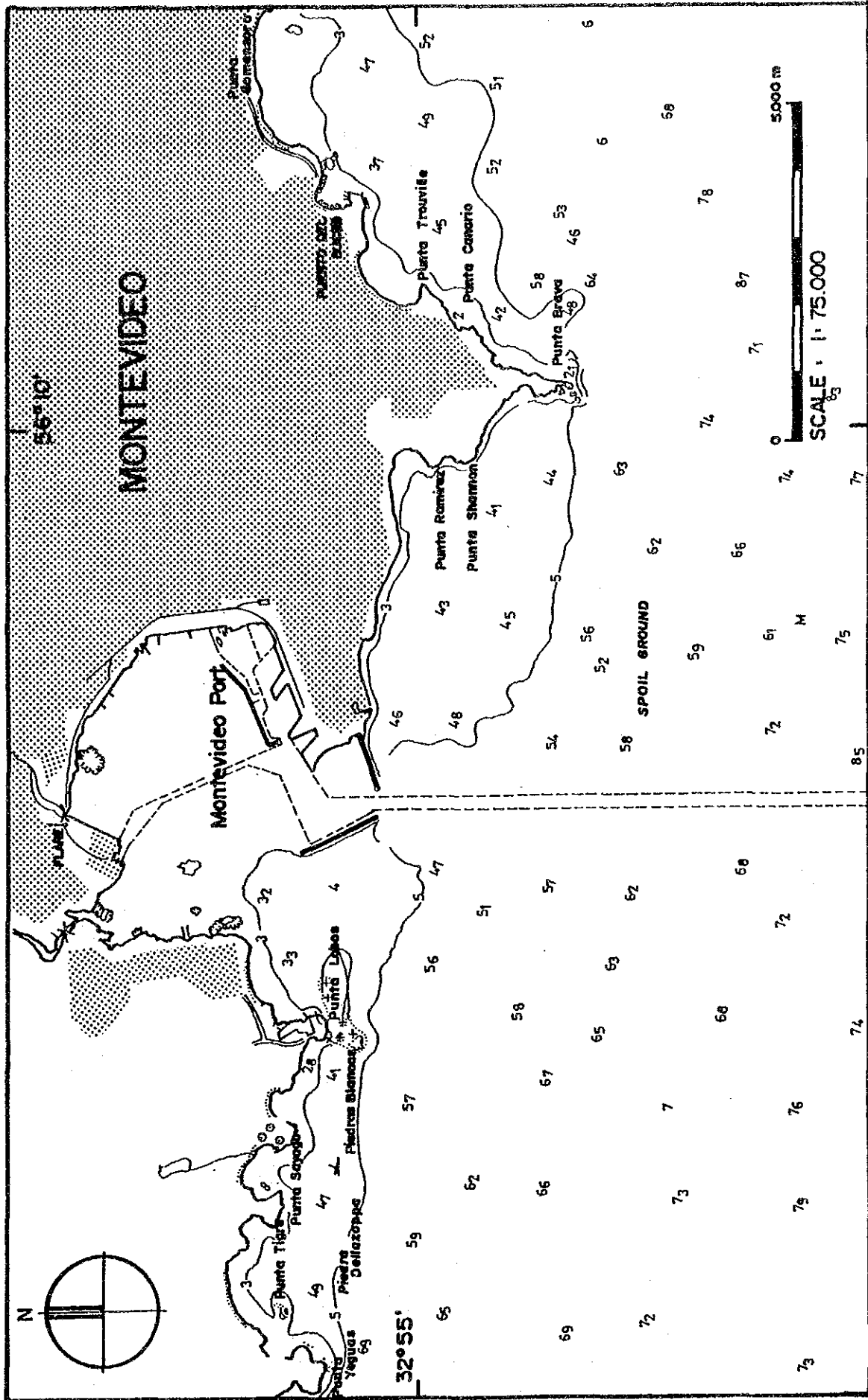


Figure 2-1-2 Location Map of Montevideo Port

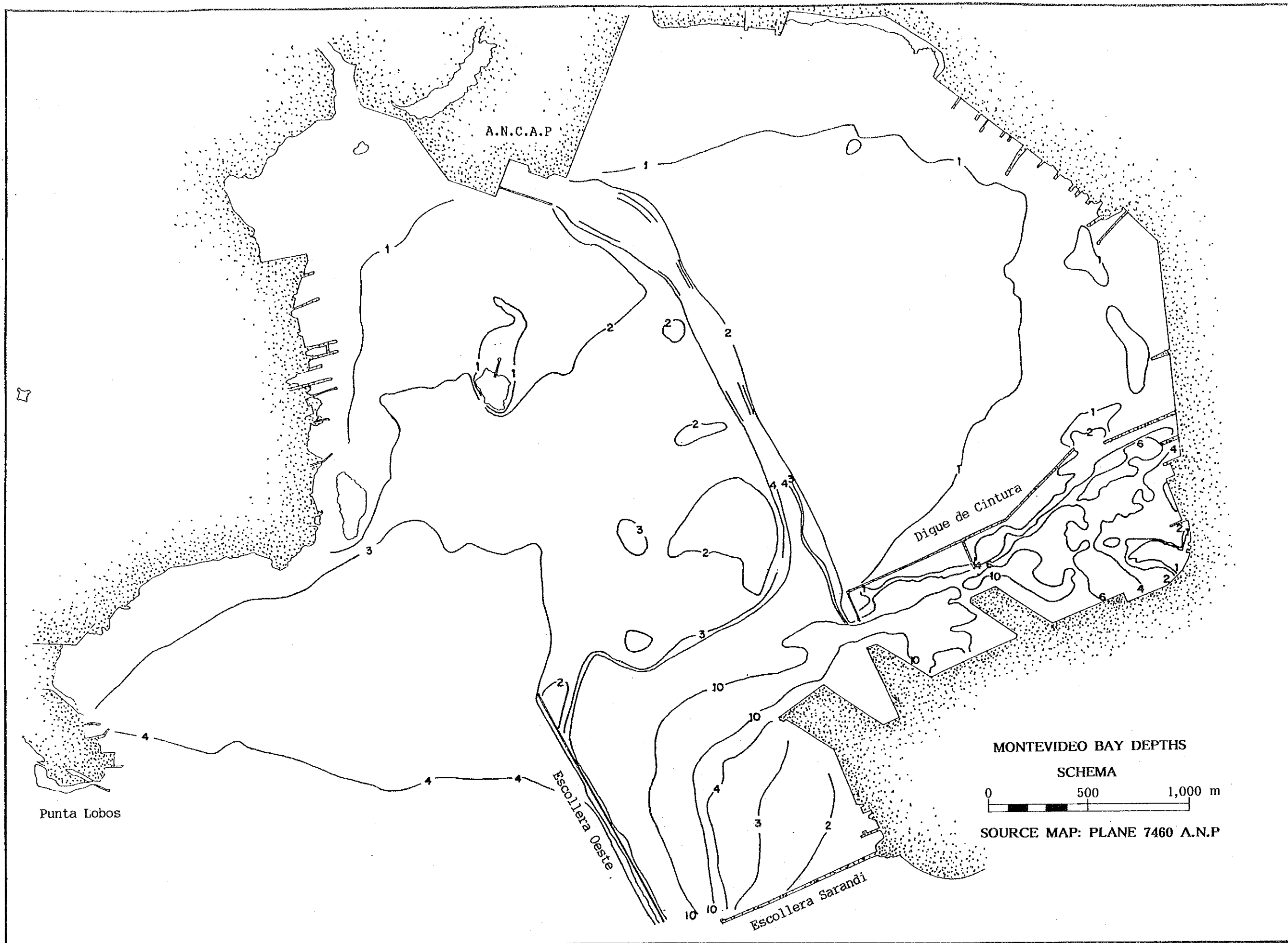


Figure 2-1-3 Sounding Chart of Montevideo Port

2-2 Meteorology

Meteorology conditions such as temperature, relative humidity, rainfall and atmospheric pressure are reported hereunder based on the data recorded for the last 11 years from 1981 to 1991, which have been provided by Direccion Nacional De Meteorologia.

2-2-1 Temperature

The annual mean temperature is around 17°C as shown in Table 2-2-1-1, and mean temperature in summer season from December to February is 22.5°C and that in winter season from June to August is 11.4°C. The maximum and minimum of monthly mean temperature is 24.4°C and 9.2°C respectively.

Table 2-2-1-1 Monthly Mean Temperature (1981-1991)
(Source: Direccion Nacional De Meteorologia)

unit: °C

Annual		Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
1981	17.0	21.5	22.5	22.7	19.6	17.4	17.5	10.6	11.2	13.5	13.2	15.5	18.7
1982	17.1	22.6	22.6	21.9	21.8	19.3	15.6	11.5	10.6	11.7	14.6	16.0	17.2
1983	16.6	21.8	24.2	22.4	20.3	17.1	13.7	9.8	9.2	11.4	12.6	16.9	19.2
1984	16.3	18.6	23.9	23.5	21.0	17.2	13.1	9.6	9.5	10.1	13.4	18.0	18.0
1985	17.0	20.9	22.5	22.7	20.1	16.9	14.4	12.4	12.2	11.7	14.1	16.3	19.7
1986	17.0	21.2	23.2	22.8	19.5	18.5	14.2	13.2	10.8	11.6	14.7	15.8	18.7
1987	16.9	20.8	23.3	23.6	21.9	17.9	12.1	11.5	12.5	11.6	12.1	15.8	19.3
1988	16.6	22.6	23.5	21.8	22.3	16.3	12.3	9.9	10.6	12.1	12.7	15.4	19.5
1989	17.6	23.3	24.4	24.2	21.2	18.0	15.0	12.2	10.8	14.2	12.5	15.9	19.2
1990	17.2	19.9	24.3	23.1	20.1	17.9	13.8	10.8	11.0	14.0	13.6	17.8	19.8
1991	17.0	22.2	22.5	21.7	21.4	17.7	16.0	11.0	10.3	12.6	14.8	15.3	18.0
Ave.	16.9	21.3	23.4	22.9	20.8	17.7	14.2	11.2	10.8	12.2	13.4	16.3	18.9
Seasonal Average		(Summer) 22.5			(Fall) 17.5			(Winter) 11.4			(Spring) 16.2		