

PUBLIC

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

**ARGENTINA**

**MESOPOTAMIA ROAD PROGRAM AND  
INTERCONNECTION WITH URUGUAY**

**(AR0028)**

**LOAN PROPOSAL**

**NOVEMBER 1970**

# ARGENTINA

## LOANS TO THE ARGENTINE NATION. MESOPOTAMIA ROAD PROGRAM AND INTERCONNECTION WITH URUGUAY

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LOANS TO THE ARGENTINE REPUBLIC FOR THE MESOPOTAMIA  
ROAD PROGRAM AND INTERCONNECTION WITH URUGUAY

A R G E N T I N A

S U M M A R Y 1/

1. Borrower: The Argentine Republic.
2. Executing Agencies: The executing agencies would be: a) the Dirección Nacional de Vialidad (DNV), an autonomous agency of the Argentine State, responsible for construction and administration of the national road network under the Department of Public Works and Transportation, which would execute the Argentine national and provincial road projects, and b) the Comisión Técnica Mixta de los puentes entre Argentina y Uruguay (COMPAU), and international public agency set up by Argentina and Uruguay, which would execute the Fray Bentos-Puerto Unzué International Bridge project.
3. Amounts and Currencies:
  - a. Up to the equivalent of US\$8.5 million from the ordinary capital resources of the Bank to finance the national highways project, made up of: i) US\$7,250,000 in foreign exchange, of which US\$2,900,000 would be resources of nonmember countries, and (ii) the equivalent of US\$1,250,000 in Argentine pesos.
  - b. Up to the equivalent of US\$8 million from the ordinary capital resources of the Bank to finance the Fray Bentos-Puerto Unzué International Bridge project, made up of: i) US\$6,350,000 in foreign exchange, of which US\$2,540,000 would be resources of nonmember countries, and ii) the equivalent of US\$1,650,000 in Argentine pesos.
  - c. Up to the equivalent of US\$17 million in United States dollars or the equivalent in other currencies forming part of the Fund for Special Operations to finance the provincial roads project, made up of: i) US\$5.5 million in foreign exchange, and ii) the equivalent of US\$11.5 million in Argentine pesos.

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1/ Except where otherwise expressly indicated, the exchange rate used for the calculations in this document was US\$1.00 = Arg\$ 3.50 (Pesos Law. 18,188). See Appendix K for discussion of the possible impact of the June 1970 devaluation of the peso to US\$1 = Arg. \$ 4 on the cost of the program.

4. Source of Funds: The ordinary capital and the Fund for Special Operations.

5. Terms, Interest, Charges and Disbursements; Currencies of Payment:

a. Terms

- i. 20 years for amortization of the loan (US\$8.5 million) to be granted from the ordinary capital resources to finance the national highways project, by means of 33 equal and consecutive semiannual installments, the first of which would be payable four years after signature of the contract.
- ii. 20 years for amortization of the loan (US\$8 million) to be granted from the ordinary capital resources to finance the Fray Bentos-Puerto Unzué International Bridge project, by means of 33 equal and consecutive semiannual installments, the first of which would be payable four years after signature of the contract.
- iii. 25 years for amortization of the loan (US\$17 million) to be granted from the resources of the Fund for Special Operations to finance the provincial roads project. This loan would be amortized by means of 43 equal and consecutive semiannual installments, the first of which would be payable four years after signature of the contract.

b. Interest:

- i. 8% per annum, payable semiannually on the balances outstanding, for loans to be granted from the ordinary capital resources. 1/
  - ii. 3-1/4% per annum, payable semiannually on the balances outstanding for the loan to be granted from the resources of the Fund for Special Operations.
- c. Service charge: 3/4 of 1% per annum on the balances outstanding of the loan granted from the resources of the Fund for Special Operations, payable semiannually on the same dates as the interest. Payments would be made in dollars on sums disbursed in that currency,

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1/ 40% of the foreign exchange component of the loans would be made up of currencies of nonmember countries expressly indicated in the loan contracts in question, to which - in addition to the basic interest of 8% per annum - a service charge of 1/2 of 1 per annum and commitment fee of 2% per annum would be applicable.

while payments on disbursements in other currencies could be made in Argentine pesos or, at the option of the debtor, proportionately in the currencies disbursed, except for amounts disbursed in the currencies of Mexico or Venezuela, on which payment would be made exclusively and proportionately in such currencies.

d. Commitment fee:

- i. 1-1/4% per annum on the undisbursed portion of the loans to be granted from the ordinary capital resources, payable semiannually in the same currencies as the loans. <sup>1/</sup>
- ii. 3/4 of 1% per annum, payable semiannually on the undisbursed portion of the loan to be granted from the resources of the Fund for Special Operations in the respective currencies committed.

In both cases the fee would commence to accrue 60 days after the date of the contract, with the first payment due six months after such date.

- e. Disbursement period: Total disbursement of the three loans would be made within 3-1/2 years after signature of the contract.

f. Currencies of payment:

- i. Amortization and interest payments in respect of the loans to be granted from the ordinary capital resources would be made proportionately in the same currencies disbursed.
- ii. Amortization and interest payments in respect of the resources of the Fund for Special Operations would be made proportionately in the respective currencies disbursed or at the option of the debtor (except for sums disbursed in the currencies of Mexico or Venezuela) in Argentine pesos for their equivalent in dollars.

6. Guarantee: The debtor's own responsibility.

7. Program Description: The purpose of the program is: a) to supplement road infrastructure in the southern part of the Mesopotamia region, and b) to provide an overland link between the Buenos Aires Metropolitan area, via the Zárate-Brazo Largo Bridge, and the Provinces of Entre Ríos, Corrientes and Misiones and, via a bridge between Puerto Unzué (Argentina) and Fray Bentos (Uruguay), the Republic of Uruguay. The program is broken down into three projects:

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<sup>1/</sup> See note on previous page.

- a. National highways: The works envisaged under this project comprise the construction of approximately 215 Km. of national trunk roads, the various sections of which are listed below:

i. National Highway 12

Brazo Largo to Ceibas	45.5 Km
Ceibas to Médanos	26.2 Km
Médanos to Gualaguay	37.7 Km

ii. National Highway 14

Ceibas to Sauce	43.0 Km
Sauce to junction with Provincial Highway 20	30.4 Km

iii. National Highway unnumbered

Junction with National Highway 14 to Fray Bentos-Puerto Unzué International Bridge	32.0 Km
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Total 214.8 Km

- b. Fray Bentos-Puerto Unzué International bridge: This project consists of the construction of a bridge and access viaducts across the Uruguay River between the localities of Puerto Unzué, Province of Entre Ríos (Argentina), and Fray Bentos, Department of Río Negro (Uruguay), with a length of approximately 5.4 Km. The Argentine Government will be financially responsible for 71.7% of the major cost items of the bridge, and the Government of Uruguay for the remaining 28.3%. 1/

- c. Provincial roads: This project envisages the reconstruction and, in some cases, execution of basic works and paving of approximately 610 Km. of secondary roads in the Provinces of Entre Ríos and Corrientes (particularly those sections most directly linked to the highways that would be included in the national highways project), as listed below:

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1/ These ratios apply to: i) physical construction; ii) the hiring of consultants to supervise bridge construction; iii) administrative expenses of COMPAU during the construction period, and iv) contingencies. The feasibility and engineering studies were financed by the two countries on a 50/50 basis. Other bridge costs relate to financing expenses and contributions to the IDB Inspection and Supervision Fund, which would be distributed between the two countries in proportion to the amounts of the respective loans.

i. Province of Entre Ríos

- Basic works and paving

RP 13 to junction with RP11	86.0 Km
RP 15 Rosario del Tala to Junction RN 18	63.0 Km
RP 19 Lucas González to Junction RP 15	49.0 Km
RP 19 junction RP 15 to Urdinarraín	<u>35.0 Km</u>

Subtotal 233.0 Km

- Reconstruction

RP 16 Gualeguay to Gualeguaychú	80.0 Km
RP 20 Gualeguaychú to Basavilbaso	<u>95.0 Km</u>

Subtotal 175.0 Km

TOTAL FOR PROVINCE 408.0 Km

ii. Province of Corrientes

- Basic works and paving

RP 6 RN 12 to RP 17	87.0 Km
RP 41 junction RN 12 to junction RP 37	37.0 Km
RP 37 RP 41 to junction RP 14	51.0 Km
RP 25 junction RN 122 to junction RN 127	<u>27.0 Km</u>

TOTAL FOR PROVINCE 202.0 Km

GRAND TOTAL 610.0 Km

8. Total Program Cost and Financing Plan: The total cost of the program that would be carried out on Argentine territory is estimated at the equivalent of US\$83,700,000, 1/ distributed as follows:

a). By major items to be financed and the sources of financing:

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1/ If the cost of the project to be carried out on Uruguayan territory is added to this figure, the total would be US\$90,400,000.



**TOTAL COST AND FINANCING PLAN FOR THE PROGRAM 1/**  
(In US\$ thousands equivalent)

	I D B   L O A N S							LOCAL CONTRIBUTION			TOTAL COST OF THE PROJECT
	CURRENCIES OF USE						TOTAL	LOCAL CURRENCY COST	FOREIGN EXCHANGE COST	TOTAL	
	IN FOREIGN EXCHANGE			TOTAL	IN LOCAL CURRENCY						
	FOR FOREIGN EXCHANGE COSTS	FOR LOCAL CURRENCY COSTS	TOTAL								
	DIRECT	INDIRECT	TOTAL								
National Highways Project (OC)	85	5,615	5,700	1,550	7,250	1,250	8,500	30,868	1,532	32,400	40,900
a. Construction (215 Km)	-	4,883	4,883	1,172	6,055	945	7,000	25,608	-	25,608	32,600
b. Contingencies	-	732	732	378	1,110	305	1,415	3,065	-	3,065	4,400
c. Supervision and Administration	-	-	-	-	-	-	-	1,660	-	1,660	1,660
d. Feasibility Studies	-	-	-	-	-	-	-	335	-	335	335
e. Other Expenses	85	-	85	-	85	-	85	200	1,532	1,732	1,800
Interest	-	-	-	-	-	-	-	170	1,315	1,485	1,485
Commitment Fee	-	-	-	-	-	-	-	30	217	247	247
IDB Inspection and Supervision	85	-	85	-	85	-	85	-	-	-	85
Fray Bentos-Puerto Unzué Bridge Project (OC) 2/	2,238	2,364	4,602	1,748	6,350	1,650	8,000	3,360	1,740	5,100	13,100
a. Construction (71.7% of US\$12,145,425)	1,472	1,969	3,441	1,457	4,898	1,376	6,274	2,434	-	2,434	8,700
b. Feasibility and Engineering Studies (50% of US\$680,000)	-	-	-	-	-	-	-	-	340	340	340
c. Consultants to Supervise Bridge Construction (71.7% of US\$600,000)	430	-	430	-	430	-	430	-	-	-	430
d. COMPAU Administrative Expenses during Construction (71.7% of US\$300,000)	-	-	-	-	-	-	-	215	-	215	215
e. Contingencies	256	395	651	291	942	274	1,216	427	-	427	1,643
f. Other Expenses	80	-	80	-	80	-	80	284	1,400	1,684	1,764
Interest	-	-	-	-	-	-	-	244	1,204	1,448	1,448
Commitment Fee	-	-	-	-	-	-	-	40	196	236	236
IDB Inspection and Supervision	80	-	80	-	80	-	80	-	-	-	80
SUBTOTAL (I + II)	2,323	7,979	10,302	3,298	13,500	2,900	16,500	34,228	3,272	37,500	54,000
Provincial Roads Project (FSO)	170	2,854	3,024	2,476	5,500	11,500	17,000	12,200	500	12,700	29,700
a. Construction (600 Km)	-	2,267	2,267	1,962	4,229	9,114	13,343	7,267	-	7,267	20,610
Entre Rios Province (398 Km)	-	1,550	1,500	1,298	2,798	6,030	8,828	4,811	-	4,811	13,639
Corrientes Province (202 Km)	-	767	767	664	1,431	3,084	4,515	2,456	-	2,456	6,970
b. Contingencies	-	587	587	514	1,101	2,386	3,487	1,827	-	1,827	5,314
c. Supervision and Administration	-	-	-	-	-	-	-	1,195	-	1,195	1,195
d. Feasibility Studies	-	-	-	-	-	-	-	389	400	789	789
e. Other Expenses	170	-	170	-	170	-	170	1,522	100	1,622	1,792
Interest	-	-	-	-	-	-	-	1,382	-	1,382	1,382
Commitment Fee	-	-	-	-	-	-	-	140	100	240	240
IDB Inspection and Supervision	170	-	170	-	170	-	170	-	-	-	170
PROGRAM TOTAL	2,493	10,833	13,326	5,774	19,000	14,400	33,500	46,428	3,772	50,200	83,700

certain differences exist between these figures and those in the technical report which result from rounding and from the composition of the currencies in which interest will be paid.  
of the Argentine portion.

SOURCE AND USE OF CURRENCIES  
(In US\$ thousands equivalent)

MIA ROAD PROGRAM AND CONNECTION WITH URUGUAY	CURRENCIES OF ORIGIN		CURRENCIES OF USE		TOTAL
	FOREIGN	LOCAL	FOREIGN	LOCAL	
<u>National Highway Project</u>					
OB Loan (OC)	7,250	1,250	5,700	2,800	8,500
Local Contribution	-	32,400	1,532	30,868	32,400
Subtotal	7,250	33,650	7,232	33,668	40,900
<u>Ray Bentos-Puerto Unzué Bridge Project 1/</u>					
OB Loan (OC)	6,350	1,650	4,602	3,398	8,000
Local Contribution	-	5,100	1,740	3,360	5,100
Subtotal	6,350	6,750	6,342	6,758	13,100
<u>Subtotal (I + II)</u>					
OB Loan (OC)	13,600	2,900	10,302	6,198	16,500
Local Contribution	-	37,500	3,272	34,228	37,500
Total	13,600	40,400	13,574	40,426	54,000
<u>Provincial Roads Project</u>					
OB Local (FSO)	5,500	11,500	3,024	13,976	17,000
Local Contribution	-	12,700	500	12,200	12,700
Total	5,500	24,200	3,524	26,176	29,700
<u>TOTAL PROGRAM</u>	19,100	64,600	17,098	66,602	83,700
<u>OB Loans</u>	19,100	14,400	13,326	20,174	33,500
OC	13,600	2,900	10,302	6,198	16,500
FSO	5,500	11,500	3,024	13,976	17,000
<u>Local Contribution</u>	-	50,200	3,772	46,428	50,200
Project I	-	32,400	1,532	30,868	32,400
Project II	-	5,100	1,740	3,360	5,100
Project III	-	12,700	500	12,200	12,700

st of the Argentine portion.

The ordinary capital loan for the national roads project would be composed of US\$7,250,000 in foreign currency and US\$1,250,000 in local currency. The foreign currency represents the following: US\$85,000 for direct foreign expenses (IDB inspection), US\$5,615,000 for indirect foreign expenses (depreciation of imported machinery and contingencies) and US\$1,550,000 for local costs. This last amount is approximately equal to the direct foreign expenses (US\$1,532,000) that the debtor would pay for financial charges during the construction period.

The ordinary capital loan for the bridge would be composed of US\$6,350,000 in foreign currency and US\$1,650,000 in local currency. The foreign currency represents the following amounts: US\$2,238,000 for direct foreign expenses (construction materials, consultants for supervision, contingencies and IDB inspection), US\$2,364,000 for indirect foreign expenses (depreciation of imported machinery and contingencies) and US\$1,748,000 for local costs. This last amount is approximately equal to the amount for direct expenses in foreign currency (US\$1,740,000) that the debtor would pay for financial charges during the construction period and the amount paid in foreign currency for feasibility studies.

The loan from the Fund for Special Operations for the provincial roads project would be composed of US\$5,500,000 in foreign currency and US\$11,500,000 in local currency. The foreign currency represents the following amounts: US\$170,000 for direct foreign expenses (IDB inspection), US\$2,854,000 for indirect foreign expenses (depreciation of machinery and contingencies) and US\$2,476,000 for local costs. If from this last amount are deducted the direct expenses in foreign currency that the debtor would finance for the feasibility studies (US\$400,000) and for financial charges in foreign currency during the construction period (US\$100,000), the balance of US\$1,976,000 in foreign currency authorized for local expenses would represent 35.9% of the foreign currency portion of the loan from the Fund for Special Operations.

9. Justification:

- a. The Government of Argentina has assigned high priority to development of the road network in Mesopotamia, both because of its economic impact and in view of the fact that this network is indispensable for national and regional integration.
- b. Mesopotamia is an important region of the country that is less developed than other areas of similar economic potential largely because of the lack of a permanent overland link across the Paraná and Uruguay Rivers which surround it and the absence of paved roads to promote internal communications in the area. In view of the fact that the bulk of regional trade is with Buenos Aires, the construction of up-to-date trunk roads linking these two parts of the country (National Highways 12 and 14) will stimulate economic activity in Mesopotamia and permit more efficient use of its productive resources.
- c. The works to be financed with IDB resources form part of a general plan for the entire Mesopotamia region, calling for the construction of approximately 2,400 Km of roads. The World Bank is studying its participation in this general plan by contributing to financing of the sections of National Highway 14 north of Gualaguaychú to Paso de los Libres in the Province of Corrientes. Proper coordination between the two institutions ensures efficient use of the external resources.
- d. For the national and provincial highway projects, the executing agency would be the Dirección Nacional de Vialidad (DNV), an organization known to the Bank through the integration highways program financed with Loans 158/OC-AR and 170/SF-AR. The DNV is an agency with years of experience in executing works of this type; it has an adequate technical staff, and it has made notable improvements in its financial and accounting organization as a result of recommendations made by the Bank for the abovementioned loans.
- e. Construction of the Fray Bentos-Puerto Unzué International Bridge would exert a major impact on physical integration of the region, particularly in view of its favorable location in the area of the Uruguay River with the greatest economic and social potential, which would facilitate the stepping up of economic and tourist relations with Uruguay by joining the two countries' road networks.
- f. The purpose of the provincial roads project is to construct paved roads serving the major towns within Mesopotamia, providing access to and interlinking the bridges across the Paraná and Uruguay Rivers and carrying traffic from south to north and from east to west in this area, particularly by tying these roads in with the national highways included in the program. These secondary roads would link

underdeveloped towns that are currently isolated from the more advanced centers in the region and in neighboring areas. The use of FSO resources to finance these feeder roads is clearly warranted in view of the features of the region that would benefit.

- g. Profitability studies for the investments in the three projects making up the program indicate that, as regards both direct and indirect economic benefits, the program as a whole would produce a satisfactory rate of return. For the national highways project, the internal rate of return for each section of highway was calculated on the basis of the direct benefits accruing from savings in the cost of vehicle operation and road maintenance. This was higher than 15% for every section. In the case of the Fray Bentos-Puerto Unzué Bridge project, the rate of return was estimated to be 11.1% on the basis of direct and indirect economic benefits, that is the benefits resulting from savings in time and cost of vehicle operation by transporting passengers and goods across the bridge and the net benefits to the Uruguayan economy from tourist expenditure as a result of the bridge less estimated cost of the services needed to cater for these tourists. Finally, for the provincial roads project, the rate of return on each of the sections studied, resulting from savings in the cost of vehicle operation and road maintenance, was higher than 20%.
10. Recommendation Based on the conclusion of the Project Committee that the program is justified from the technical, economic and financial standpoint, the Operations Department submits the respective loan document to the President of the Bank for consideration and subsequent presentation of the corresponding proposed resolutions to the Board of Executive Directors for approval.

## PROGRAM ANALYSIS

### I. INTRODUCTION

#### A. Background

- 1.01 In June 1968, the Comisión Técnica Mixta del Puente entre Argentina y Uruguay (COMPAU) sounded out the Bank on the possibility of obtaining a loan to finance the construction of a bridge between the localities of Puerto Unzué (Argentina) and Fray Bentos (Uruguay). A Bank operations mission that visited Argentina during late August and early September 1968 took the opportunity to provide the Argentine members of COMPAU with information on the data required by the Bank for the consideration of loan applications.
- 1.02 Another operations mission that visited the Argentine Republic from October 26 to November 14, 1969, examined with the Argentine authorities the possibility of including a road development program in Mesopotamia and a road link to Uruguay in the tentative list of Bank operations for 1970/71. This program, which is closely related to other projects for road access to Mesopotamia, <sup>1/</sup> is made up of the following three projects: national highways 12 and 14, international bridge between Puerto Unzué (Argentina) and Fray Bentos (Uruguay), and provincial roads.

#### B. Application

- 1.03 On December 10, 1969, the Department of Public Works and Transportation officially applied to the IDB for a loan to finance approximately 50% of the total cost of the program for road development in Mesopotamia and the Interconnection with the Republic of Uruguay.
- 1.04 In December 1969, the Secretariat of the Consejo Nacional de Desarrollo del Gobierno de la Nación Argentina (CONADE) confirmed, in a letter addressed to the President of IDB, the high priority attributed by the Government to the Fray Bentos-Puerto Unzué International bridge project and the two other projects in the program. The Government of Uruguay has likewise attached high priority to the international bridge project.
- 1.05 A Bank mission visited Argentina in March 1970 to clarify certain aspects of the operation and to hold preliminary conversations with the national authorities on its possible financing conditions. A visit was paid to the area that was to benefit from the program, and a number of the roads to be rebuilt or constructed with program

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<sup>1/</sup> The other projects referred to in paragraph 1.02 are: a) Corrientes-Barranqueras Bridge (financed by the IDB); b) Zárate-Brazo Largo Bridge (to be executed by the DNV with local resources); c) Paraná-Santa Fé Tunnel (already in operation), and d) projected bridges to Brazil, Paraguay and Uruguay.

resources were inspected. The mission concluded its work on April 4, 1970.<sup>1/</sup> Its conclusions are reflected in this loan document.

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<sup>1/</sup> This mission also studied the bases for a prospective loan to Uruguay that would be used to finance part of that country's share of the bridge cost. The application from the Uruguayan Government was submitted to the Bank in a letter from the Minister of Public Works dated February 6, 1968.

## II. THE BORROWER AND EXECUTING AGENCIES

### A. The Borrower

#### 1. Identity

2.01 The Argentine Republic would be the borrower.

#### 2. Juridical Capacity

2.02 No problems of a legal nature exist as regards formalizing the proposed loan.

#### 3. Financial Situation

2.03 In view of the fact that resources to cover the local contribution will be provided out of the national budget, it was felt pertinent that information be given with regard to the evolution of this budget over the last few years.

2.04 Data contained in the CIAP Secretariat's report on Argentina of February 18, 1970, showed the following figures for the national budget in recent years.

TABLE I

COMPARATIVE STATEMENT OF BUDGET RECEIPTS AND EXPENDITURES, 1967-70<sup>1/</sup>  
(In millions of US\$)

Item	1967	1968	1969	1970
Total receipts	1,932	2,125	2,500	3,271
Less current expenditures	1,664	1,687	1,889	2,290
Available for investment	268	438	611	981
Less investment expenditures	536	788	942	1,248
Deficit	268	350	331	267

<sup>1/</sup> Figures for 1970 are those contained in the budget for that year, while those for 1967-69 are actual performance figures.



The above table shows that, during 1967-69, revenues increased from an index figure of 100 to 130 and that current outlays rose from 100 to 114. The sizable increase in receipts and the slower rate of growth in current expenditures has made it possible to have considerable increase in resources available for investments. These resources increased from an index figure of 100 for 1967 to 228 in 1969, in other words some 230%, during this period. Investments increased from an index figure of 100 in 1967 to 176 in 1969. Estimates for 1970 suggest an even more favorable position. These figures are an indication of the effort made by the government during this period to channel resources into investments and at the same time to keep deficits down to manageable proportions.

- 2.05 The financing of deficits is covered by advances from the Central Bank, treasury bills and - where necessary - public borrowings. This policy has enabled the government to put its significant investment program into effect. It should be pointed out that in recent years a substantial improvement in the structure of deficit financing was brought about through a greater utilization of resources obtained from sales of medium- and long-term bonds on domestic and foreign markets.
- 2.06 The breakdown of investment expenditures for 1968 and 1969 was as follows:<sup>1/</sup>

TABLE II  
DISTRIBUTION OF INVESTMENT EXPENDITURES

Sector	1968 <sup>2/</sup>	1969 <sup>2/</sup>
Transportation and communications	36.8	40.8
Power	2.0	3.1
Agriculture	2.2	2.0
Industry	5.8	1.2
Education	9.0	8.9
Health and sanitation	11.2	11.6
Housing	-	2.5
Defense and national security	18.9	16.2
Others	14.1	13.7
	100.0	100.0

The above table shows the importance the government attaches to the transportation and communications sector.

<sup>1/</sup> Figures obtained from the Inter-American Committee on the Alliance for Progress (CIAP report of February 18, 1970).

<sup>2/</sup> Excludes funds deriving from domestic and/or foreign public indebtedness.

- 2.07 Increases in investment spending and in resources mobilized by the State, as well as the ratios between them, are as follows: 1/

TABLE III  
TOTAL RESOURCES AND INVESTMENTS  
(In millions of US\$)

	1967	1968	1969	1970
Total receipts	1,932	2,125	2,500	3,271
Investment expenditures	536	788	942	1,248
Ratio of investments to total receipts	27.7	37.1	37.7	38.2

B. Executing Agencies

- 2.08 The executing agency for the national highways and provincial roads project would be the Dirección de Vialidad (DNV). The executing agency for the project covering the Fray Bentos-Puerto Unzué International Bridge would be the Comisión Técnica Mixta del Puente entre Argentina y Uruguay (COMPAU).

1. Dirección Nacional de Vialidad (DNV)

a. General aspects

- 2.09 The DNV is a self-governing decentralized agency coming under government control through the Department of Public Works and Transportation. It is responsible for study, construction, improvement and maintenance of the main system of national highways and its ancillary works.
- 2.10 The main network of national highways comprises some 45,000 km.. of roads throughout the country and at present used by approximately 2,100,000 motor vehicles. The investments effected by the country in highways during 1969 amounted to approximately US\$428.5 million. Of this investment, 57% (US\$244.2 million) was made directly by the DNV itself, while the 43% balance was paid out through the provincial departments under the DNV's supervision (see paragraph 2.36).

b. Organization

i. Background

- 2.11 The DNV was originally set up under the provisions of Law 11,658 of October 5, 1932. Its structure was modified on various occasions until, ultimately, on March 30, 1970, its present organizational structure was established in accordance with Decree 962 of the Executive Branch.

1/ Excludes funds deriving from domestic and/or foreign public indebtedness.

- 2.12 The DNV began a reorganization process in 1969 involving its internal structure and resulting in changes in its staff allocation. In this process, it received advisory support from the Armed Forces Board of Scientific Research and Experimentation (JICEFA), operating under the Ministry of Defense. This organization was responsible for complete reorganization of the DNV's accounting and financial functions (see paragraphs 2.22 and 2.57).

ii. Structure

- 2.13 The senior official at the DNV is the General Administrator, who is responsible for the management and supervision of all activities carried out by this agency. He reports directly to the Secretary of Public Works and Transportation.
- 2.14 As the DNV organizational chart attached in Appendix B shows, the organization of this institution comprises the Office of the General Administrator, the Office of the Deputy-General Administrator, 24 regional districts and the following six principal offices:

Office of Highway Planning  
Office of Highway Engineering  
Office of Construction  
Office of Maintenance Operations  
Office of Control Operations  
Office of General Administration

- 2.15 The above-mentioned offices (with the exception of the Office of Control Operations) are subdivided into departments, divisions and sections. The structure with which they have been provided is adequate to enable them properly to execute the tasks delegated to them.
- 2.16 The duties of the Offices of the General Administrator and Deputy-General Administrator and the main and regional offices are summarized below:

Office of the General Administrator: Handles the National Highway Fund and the agency's assets and installations and supervises all its dependencies (see paragraph 2.42).

Office of the Deputy-General Administrator: Assists and deputizes for the Office of the General Administrator, executing such tasks as are delegated to it by the latter.

Office of Highway Planning: Carries out planning functions, advising the Office of the General Administrator in matters relating to the execution of highway construction plans best suited to the nation's highway transportation needs.

Office of Highway Engineering: Directs highway studies and projects, from the preliminary research stage to the preparation of bidding documents.

Office of Construction: Is responsible for issuing calls for bids, certifying work completed and supervising the construction of highways to the point where these are opened up for traffic and provides for the construction and maintenance of DNV buildings, workshops, warehouses and camps.

Office of Maintenance Operations: Supervises maintenance of the national highway network and executes works performed directly by the agency itself. Is responsible for the purchase and repair of equipment belonging to the DNV.

Office of General Administration: Directs all accounting, economic and financial activities, personnel and social services of the agency.

Office of Control of Operations: Is responsible for internal audit, control and evaluation duties in relation to the DNV's technical, administrative and accounts management operations.

Regional Departments: DNV activities in the field are carried out through 24 districts, divided into four regions. Each district is organized into three functional divisions: construction, maintenance and administration. Through these, regional departments control works to be carried out in all regions of the country, under DNV's responsibility.

- 2.17 In addition to headquarters, offices mentioned and their respective departments, divisions and sections, the DNV also comprises a Department of Legal Affairs, a Purchasing Division and a Special Credits Division. The first two units report directly to the Office of the General Administrator and the latter to the Finance Department of the Office of General Administration. The responsibilities of these units are summed up below:

Department of Legal Affairs: Advises the Office of the General Administrator on all legal matters.

Purchasing Division: Is responsible for implementing all legal provisions in relation to purchasing activities concerning the promotion of DNV affairs.

Special Credits Division: Coordinates all aspects relating to credits granted by foreign agencies and is responsible for the operation of works programs and utilization of loans.

- 2.18 The Federal Highway Council, composed of DNV officials and of provincial highway units, is also part of the DNV. Its chairman is the Director of the DNV Highway Planning Office. The council is responsible for studying and coordinating highway works in the country. It meets at least once a year.

- 2.19 In summary, it can be said that the present structure of the DNV will enable it to meet its responsibilities, that its operations are in line with modern principles and standards and that it provides for adequate decentralization of work among its offices, departments, divisions, sections and regional and district offices.

iii. Personnel

- 2.20 The DNV at present employs a total of 15,102 persons, with the following breakdown:

University level	441
Technicians	1,764
Office	923
Laborers	11,640
Others	<u>334</u>
Total	<u>15,102</u>

Head office administrative and technical staff consists of 1,393 employees classified as follows:

University level	290
Technicians	579
Accounting and office	421
Others	<u>103</u>
Total	<u>1,393</u>

- 2.21 In order to ensure proper execution of its activities, Decree 7,206 of November 18, 1968, authorized the DNV to contract for the services of additional professional and technical personnel to cover the programming, study, construction, management and supervision of works to be carried out. This led to an increase of 43 in the number of professionals at the DNV during 1969.
- 2.22 It should be mentioned that under the DNV's new structure (see paragraph 2.12) this personnel reorganization policy is taking place along with the contracting of new staff, and the situation as regards accounts and financial personnel has improved appreciably. In addition, in 1969, a Deputy-General Administrator and university graduates were hired and the number of qualified personnel has increased.
- 2.23 Generally speaking, the technical and administrative capacity of DNV personnel will enable it both to implement the proposed program submitted to the IDB and to carry out its normal activities.

iv. Accounting system

- 2.24 The DNV's accounting system is governed by the provisions of the General Accounting Law which requires the establishment of a budgetary accounting system to control the utilization of resources allocated to its various works and the keeping of works accounts to provide an analytical record of their execution.
- 2.25 Under the system in force, the accounts only show receipts actually received: in other words, sound accounting principles are observed. The accounts plan and the accounting manual are satisfactory. Furthermore, accounts of IDB loans are kept separately from those of loans granted by other international agencies.
- 2.26 The production of budgets and statements and the maintenance of records are the responsibility of the Accounts Department, which reports directly to the Office of General Administration. In order to carry out its duties, this department is divided up in the following divisions:
- Budget Division: Prepares the receipts and expenditures budget and prepares the studies and comparative statements required.
- Payment Division: Is responsible for payments relating to payrolls, invoices, miscellaneous charges, liabilities and other disbursements.
- General Accounts Division: Records all cash movements, controls internal movements and prepares periodic accounts. It also coordinates the supervision of accounts in the districts.
- 2.27 It should be noted that to comply with the principles of proper administration and to maintain a proper separation of functions, those duties relating to the handling of assets entrusted directly to the Office of the General Administrator and those relating to the handling of funds or other financial assets entrusted to the care of other sectors of this organization are effected by separate divisions (Capital Accounts Division and Treasury Division).
- 2.28 In each case, accounting in the districts is under the responsibility of an accounts expert. Districts are required to submit monthly accounts to the DNV, to the National General Accounting Office and to the Office of the National Comptroller, with the latter carrying out inspections in the field every 18 to 20 months. Similarly, the districts are subject to permanent periodical spot checks by DNV auditors. Regulations have been issued covering accounting methods in the districts and these are brought up to date and improved from time to time by the DNV Accounts Department.

- 2.29 In summary, it can be said that, after review of the accounting procedures followed by the DNV we found them satisfactory. The systems adopted for the preparation of budgets and for subsequent control of their execution are also felt to be satisfactory.

v. Procurements and payment of contractors

- 2.30 Purchases are effected through a system of public bids and in accordance with the State Regulations for Contractors, which lay down the system to be followed by all departments in the government, in accordance with the law.
- 2.31 The DNV has adopted a centralized purchasing system to handle the needs of its various offices and districts and controls the distribution of materials among these units. Inventory control is carried out by each district and at DNV headquarters through a system of permanent inventories which is felt to be satisfactory. The procedures followed with regard to payment of contractors involve adequate control measures and are also considered to be satisfactory.

vi. Internal audit

- 2.32 The DNV has an internal audit unit comprising a group of auditors responsible for reviewing and maintaining uniform standards throughout the accounting and financial systems of the districts and for reviewing the corresponding financial statements and documents in a manner felt to be acceptable.
- 2.33 Although the overall pattern of standards and procedures actually used by the DNV for the supervision of its operations is considered to be satisfactory, this agency does not possess an internal audit manual and uniformity in the procedures used has been gradual and is the result of work done by government inspectors. Under the reorganization now taking place at the DNV, it is planned to adopt a manual covering all internal audit procedures to be used, which is expected to be ready by the end of 1970.

vii. External audit

- 2.34 External audit and inspection of the DNV is provided for by the National General Accounting Office and the Office of the National Comptroller. To this end, the latter maintains permanent offices at the DNV. The former, which lays down the general accounting methods to be used in accordance with the provisions of the General Accounting Law, has established an advisory group to supervise the enforcement of these methods and this group advises government agencies - among them the DNV - in all such matters.

- 2.35 The DNV is required to submit a monthly financial statement to the National General Accounting Office and a statement of budget performance within 45 days after the close of each fiscal year, to accompany the annual accounts. This office also makes periodic inspections involving both a review of the agency's analytical accounting methods and an examination of the various transactions recorded, which makes it possible to state that a permanent system of control exists within that agency covering the DNV's administrative, accounting and financial management.

viii. Provincial departments

- 2.36 As laid down in the DNV charter law, autonomous administrative, technical and financial units have been established. These are called provincial highway departments. Generally speaking, these units execute all highway works effected in the provinces under DNV supervision and watch over maintenance of these projects. The funds made available to the provinces for the construction, improvement and maintenance of their road networks are obtained from gasoline, oil and tire taxes, and these funds are allocated by the federal government through the DNV on the basis of percentages indicated in Appendix E.
- 2.37 The proposed program covers works to be effected in the Provinces of Entre Ríos and Corrientes, though without contributions by the provinces. With this in mind, the operational capacity of the departments in these two provinces was reviewed, and it was concluded that they were both properly organized, that they maintained uniform accounting systems enabling them to fulfill their obligations and that their personnel was properly experienced and capable of carrying out this program.
- 2.38 In order to provide an idea of the magnitude of highway works executed by the provincial departments of Entre Ríos and Corrientes, certain data relating to total investments and allocations made in these departments during 1965-69 are submitted below:



TABLE IV  
TOTAL INVESTMENTS AND EXPENDITURES 1965-69  
(In US\$ thousands)

	1965	1966	1967	1968	1969
<u>Entre Ríos Provincial Highway Department</u>					
I. <u>Investments</u>	3,706	3,762	3,103	6,965	6,430
Works	2,841	2,670	1,118	5,592	4,799
Highway maintenance	742	975	1,925	1,363	1,614
Other	123	1,117	60	10	17
II. <u>Total Expenditures</u>	4,625	4,762	4,562	8,287	7,213
<u>Corrientes Provincial Highway Department</u>					
I. <u>Investments</u>	2,330	4,272	4,306	6,134	8,044
Works	2,265	4,180	4,197	5,942	7,926
Highway maintenance	65	92	95	115	118
Other	-	-	14	77	-
II. <u>Total Expenditures</u>	2,861	5,028	5,191	7,034	9,177

- 2.39 The above figures show that during the period under review the Entre Ríos and Corrientes Provincial Highway Departments handled a fairly substantial volume of works (which has almost doubled in the last four years), which fact itself indicates that they have the experience required to develop the proposed program.
- 2.40 As shown in the forecast appropriations for the Provincial Department of Entre Ríos in 1970-74 (see Appendix G), the road works program for the province will increase from the equivalent of US\$4.8 million in 1969 (see paragraph 2.38, Table IV) to US\$12.7 million in 1974. This increase would result from expansions spread over five years. The works to be financed out of IDB resources would represent approximately 28% of the total works to be effected in the province during this period. It is felt that the Entre Ríos Provincial Department would be suitably organized for the proper handling of this increase in work volume resulting from the implementation of any project financed by the IDB.
- 2.41 The Corrientes Provincial Department spending program for 1970-74 (see Appendix H) shows that investments in works, amounting in 1969 to the equivalent of US\$8 million, would amount to the equivalent of US\$10.3 million in 1970, but would record a substantial reduction in 1972. This results from the fact that the provincial works program begun in 1969

should be completed in 1971.<sup>1/</sup> Investments to be financed out of IDB resources represent approximately 21% of total highway works to be effected in the province during this period. It is felt that the Corrientes Provincial Department is suitably organized for the proper handling of this increase in work volume resulting from the implementation of any project financed by the IDB.

c. Financial Aspects

i. Source of DNV resources

- 2.42 Taxation established under special legislation which will be described below provides the main source of funds for use by the DNV.

Fuel tax, established under Law 17,497 of December 28, 1967, and charged on all transfers of liquid fuels. Its amount is equal to the difference between the official sales price for each fuel (which is subject to review at least once per annum) and the stored price (total production cost plus reasonable profit) authorized for each fuel by the national government. The resulting revenues obtained from operations taxed under this law are credited to the "Fuel Account", which is distributed in the following manner:

48% to the National Highway Fund  
35% to the National Power Fund  
14.5% to the provincial highway departments  
2.5% to the special fund for use by provincial highway departments.

In its turn, the National Highway Fund is distributed 65% to the DNV and 35% to the provincial highway departments (see Appendix C).

Special gasoline tax, established under Law 18,201,<sup>2/</sup> enacted May 9, 1969, was an emergency tax which is to remain in force from May 10 of last year until May 10, 1974. The rate of this tax is seven centavos (at present US\$0.0175)<sup>3/</sup> per liter of high-grade or regular gasoline. The funds obtained from this tax are allocated to the financing of the DNV's activities during that period (see Appendix D).

Supplementary National Road Fund, established under Law 15,274 of February 22, 1960, currently receives revenues obtained under the "Tire Tax". This

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<sup>1/</sup> This program is independent of works to be financed under the present program.

<sup>2/</sup> Although this law expires in 1974, experience in Argentina with various tax laws of limited duration has shown that they are extended if warranted by program needs. In this specific case, the Argentine authorities have stated that the law will "probably be extended because of the heavy DNV investment program. At any rate, the law will be in effect throughout the period of program execution.

<sup>3/</sup> Rate of exchange adopted: US\$1.00 = 4.00 pesos.

tax is charged as follows: 3.56 pesos (equivalent at present to US\$0.89)<sup>1/</sup> per kilo of blackwall tires sold, and 4.50 pesos (equivalent at present to US\$1.125)<sup>1/</sup> per kilo of whitewall tires.

The proceeds of these taxes are allocated as follows: 65% to the DNV to finance the construction and/or reconstruction of the national road network and 35% to the provincial highway departments for the construction and improvement of local roads and the construction of main road networks in the cities under their jurisdiction (see Appendix D).

Tax for the Agricultural Development Road Plan, established under Law 15,273 and amended under Law 16,450 which imposes an export tax on certain agricultural products at the rate of 1% for the financing of the Agricultural Road Development Plan. This fund is split up as follows: 60% for works coming under the responsibility of the DNV and the remaining 40% for works under the responsibility of the provincial highway departments (see Appendix D).

Other resources - There are also less important taxes, such as the tax on lubricants (Decree Law 505/58), the supplementary tire tax (Decree Law 505/58), the tax on purchase or transfer of motor vehicles (Law 14,385 and Decree Law 11,450/62) and the tax on internal consumption of liquid fuels in the federal capital and in Tierra del Fuego (Decree Law 5574 and Law 16,657). These all provide specific resources for the DNV. In addition to these tax-based resources to finance its activities, the following supplementary resources are also available to the DNV: income from investments and proceeds from the sale of publications and maps, rental of equipment, services rendered to third parties and sale of obsolete fixed assets, as well as funds obtained from loans granted by external financing agencies such as the IDB, IBRD, AID and EXIMBANK, and from National Treasury contributions. Up to 1968, contributions obtained from the country's general revenues (contributions from the National Treasury) accounted for a sizable proportion of DNV financial resources. Since that year, the agency's financial structure has improved considerably as a result of specific taxes levied by the government, which reduced the need for government support of the DNV as a charge against the country's general revenues.

- 2.43 The relative importance of some of the sources of revenues mentioned in the previous paragraph can be better appreciated in the light of their respective contribution to the DNV's total revenues for 1969, as follows:

Fuel tax	73%
Tire tax	17%
Tax on sale and transfer of motor vehicles	4%
External loans	5%
Other	1%
Total	100%

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<sup>1/</sup> Rate of exchange adopted: US\$1.00 = 4.00 pesos.

ii. DNV receipts and expenditures 1965-69

2.44 A summary of the DNV's receipts and expenditures for 1965-69 is given below:

TABLE V

COMPARATIVE STATEMENT OF RECEIPTS AND EXPENDITURES 1965-69  
(In US\$ millions)

	1965 <sup>1/</sup>	1966 <sup>1/</sup>	1967	1968	1969
<u>RECEIPTS</u>	63.1	70.7	132.2	214.1	290.2
Fuel tax	27.9	32.1	69.7	137.8	210.9
Tire tax	14.8	20.4	37.6	46.7	49.6
Other taxes	12.1	11.7	12.7	14.6	12.9
Nontax receipts	0.9	0.4	1.6	3.2	3.2
Contributions from government and abroad	7.4	6.1	10.6	11.8	13.6
<u>EXPENDITURES</u>	61.6	88.3	137.5	219.7	283.5
<u>Current expenditures</u>	16.9	27.9	36.6	38.5	39.2
Personnel	10.6	19.2	21.5	23.9	26.9
Nonpersonnel items <sup>2/</sup>	6.3	8.7	15.1	14.6	12.3
<u>Capital expenditures</u>	44.7	60.4	100.9	181.2	244.3
Interest and debt amortization	-	-	-	1.5	4.3
Capital assets	2.3	2.7	6.5	10.7	5.4
Public works plan	23.7	36.3	59.2	120.4	178.8
Government contribution to provinces	18.7	21.4	35.2	48.5	55.7
Others	-	-	-	0.1	0.1
Surplus (Deficit) <sup>3/</sup>	1.5	(17.6)	(5.3)	(5.6)	6.7

<sup>1/</sup> Exchange rate: 1965 - US\$1 = 188.5 pesos; 1966 - US\$1 = 247.3 pesos.

<sup>2/</sup> Essentially materials and supplies.

<sup>3/</sup> See paragraph 2.45 c.

2.45 In connection with the above table, the following comments may seem appropriate:

- a. Taking 1965 as base 100, DNV revenues had increased to an index of 460 over the period to 1969. This significant growth is due mainly to an increase in tax revenues and to funds received out of loans granted. The special gasoline tax was established in 1969 (Law 18,201, see paragraph 2.38), bringing an additional US\$38.2 million for that year, with an increase also in revenues from the tire tax. These two taxes made a substantial contribution to the increase recorded in the amount of resources available to the DNV. Capital revenues increased as a result of loan funds obtained mainly from the National Postal Savings Fund and from the disbursement of loans obtained from international agencies. Nontax income also showed a considerable rise during 1967-69, resulting from income obtained out of the toll charged on the Colastine River bridge and from an increase in various items of income resulting from the sale of assets and provision of services.
- b. In regard to appropriations, it should be pointed out that, taking 1965 as base 100, capital expenditure would have increased during the period to 1969 to an index of 546, with current expenditure increasing to only an index of 232 during the same period. Under the heading of capital expenditures, the public works plan was the item showing the greatest increase. It is the most important single item and comprises investments made in the construction and maintenance of highways. This is indicative of the increasing volume of works carried out by the DNV. As regards current appropriations, the most significant increase was in the category of nonpersonnel expenditures which includes materials and supplies. The servicing of the foreign and domestic DNV debt in 1968 and 1969 accounted for less than 1% and 1.8%, respectively, of total appropriations and 0.7% and 1.5% of the organization's total resources.
- c. Deficits occurring in 1966, 1967 and 1968 amounting to US\$17.6 million, US\$5.3 million and US\$5.6 million, respectively, were covered by contributions from the National Treasury or advances from the Central Bank. From 1969 onward, the deficit situation was cleared up as a result of the new taxes levied, and the DNV's financial position became very much more solid.

2.46 Presented below are the comparative figures for DNV's investments and total government investments.

TABLE VI

TOTAL GOVERNMENT AND DNV INVESTMENTS  
(In US\$ millions)

<u>Investments</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
By the National Government	536	788	942
By the DNV	101	181	244
DNV/national - %	18.8	23.0	25.9

The above figures are an indication of the great importance attached by the government to developing the country's road system.

iii. DNV's financial needs 1970-79

- 2.47 In order to estimate the DNV's resources and outlays available over the next ten-year period, data were prepared, as summarized in Appendix F, taking into account tax revenues to be obtained, government contributions and resources deriving from loans (which are now being executed and/or are at the negotiation stage) granted by international financial institutions. For the period as a whole, funds obtained from tax resources contribute 92.4% of total receipts, while government contributions and external funds represent 6.3% and the 1.3% balance consists of nontax resources. The revenues projected reflect a very much more moderate rate of growth than the trend shown for this item over the last five years. Projected spending was based on the rate of growth shown for receipts. Investments in the construction and maintenance of highway works included under the Public Works Plan item amount to US\$2,111 million for 1970-79, and this expenditure is covered by a factor of more than 1.6 out of tax resources, which are expected to reach US\$3,393 million.
- 2.48 Investment projections for road construction and maintenance for 1970-79, representing 57.5% of total DNV resources for the period; are felt to be acceptable, based on experience over the last five years. During that period, this item represented 55.5% of total DNV receipts.
- 2.49 Generally speaking, current and capital expenditures projected for 1970-79 remain at a level very close to those actually recorded in the last five years. Thus it is reasonable to expect that these projections are accurate and lie within the realm of possibility, especially as regards capital spending.
- 2.50 Interest and amortization outlays during the ten-year period, as shown in Appendix F, total US\$207.9 million, in other words, only 5.7% of total DNV resources and some 6.1% of its tax-based resources. It should be noted that the local contribution for the three projects under consideration in this document represents only 7.4% of tax revenue for its peak year.

iv. Highway users' financial contributions

- 2.51 The following table shows the relationship between revenues obtained from highway users' contributions and the amount of expenditures on construction and maintenance of highways during 1965-69.

TABLE VII  
(In US\$ millions)

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
Highway users' payments <sup>1/</sup>	54.7	62.3	98.3	149.3	205.2
Investments in highways <sup>2/</sup>	30.02	45.0	74.3	135.0	191.1
Excess of tolls over investments	24.7	17.3	24.0	14.3	14.1

<sup>1/</sup> Covering the following taxes: special gasoline tax, fuel tax, tire tax and tax on the purchase and transfer of motor vehicles.

<sup>2/</sup> Expenditures on highway construction, improvement, paving and maintenance.

- 2.52 As seen in the above table, tolls obtained from highway users were greater than the amount of investments made in the construction, improvement, paving and maintenance of national public highways during 1965-69. This indicates that highway users are making a fully satisfactory contribution to the financing of these roads, despite the considerable increase in public investment recorded and allocated to this sector.
- 2.53 Our review of this aspect enables us to conclude that the DNV of Argentina is in a position to make the contributions required for the proposed loans.

d. Evaluation of Previous Loans

i. General aspects

- 2.54 On December 28, 1967, the IDB granted the Republic of Argentina two loans (170/SF-AR and 158/OC-AR) to finance projects involving highway links with Chile and Bolivia and the Corrientes-Barranqueras Bridge over the Parana River, respectively. The first was for US\$21,150,000, charged to the resources of the Fund for Special Operations, and the second for US\$12,850,000 charged to the ordinary capital resources of the Bank.
- 2.55 The loan contracts were signed on June 18, 1968, and were substituted by others dated August 30, 1969, but this did not change the nature of any of the economic or financial clauses. According to the later contracts, the first disbursement was to have been effected by October 1, 1969, that is, only one month after signature of the contracts.

However, as a result of problems faced by the borrower in relation to the fulfillment of requirements prior to the first disbursement, it became necessary to postpone the final date of first disbursement for two months, i.e. to December 1, 1969. <sup>1/</sup> During that period, the legal requirements were complied with and the loans were declared partially eligible for disbursement. On May 15 of this year, both loans were declared fully eligible for disbursement.

- 2.56 All the requirements laid down in the loan contracts are being satisfactorily complied with by the DNV and it has available the resources required as counterpart funds to execute the project.

ii. Technical assistance

- 2.57 There was no allocation for technical assistance under the above-mentioned loans. Nevertheless, specific conditions were laid down intended to bring about an improvement in the DNV's accounting systems and to strengthen its Special Credits Office. As a result, the following measures were put into effect within the DNV aimed at significantly improving management operations.

Contracting of JICEFA: At a cost of US\$28,300, on December 18, 1968, the DNV contracted the services of the Armed Forces Board of Scientific Research and Experimentation (JICEFA), under the Ministry of Defense, to carry out the following duties: 1) to restructure the DNV's organization and work methods; 2) to study the best possible utilization of accounting equipment already installed, and 3) to survey and analyze information needs, prior to restructuring the accounting process, establishing a modern control system and determining financial data requirements for effective administration. This job has been under way since the middle of 1969 and is being handled by a group of highly capable experts in the field. Its final report had reached the preparation stage in April 1970.

Setting up of an IDB Loan Coordination Office: To centralize all matters relating to these loans, a special office was organized and established within the DNV. It is headed by an engineer and an accountant. It has been working satisfactorily.

Reorganization: A complete restructuring of the staff hierarchy was begun, in addition to personnel renewal. The hiring of a substantial number of qualified staff resulted in important improvements. The DNV's new organizational structure resulting from this reorganization, carried out in cooperation with JICEFA was finally approved.

<sup>1/</sup> These problems related basically to problems in interpretation of certain clauses of the loan contracts and in preparation of the investment timetable and of the list of goods and services.



Subsequent staff strengthening: During the current year a minimum of 40 additional university professionals are being contracted for the DNV.

Accounting and financial studies: During 1968, various studies were effected in the accounting and finance field, such as: 1) study of accounting systems in use, their updating to meet legal provisions in force and the requirements laid down by international institutions; this study was carried out with the cooperation of the General Accounting Office; 2) study of a basic system of short-, medium- and long-term fund movement projections, to provide management information required in reaching financial decisions, implemented in 1969 with the collaboration of the Department of Finance, and 3) a study of the improvements in treasury operations, carried out in collaboration with JICEFA.

- 2.58 Generally speaking, it is felt, conditions of accounting and financial nature contained in both loan contracts have been complied with satisfactorily though with some delay. The DNV has already submitted to the Bank financial statements to December 31, 1967 and 1968, certified by the General Accounting Office. These have been evaluated by the corresponding units of the IDB. Recommendations formulated by the Bank in regard to the first of these statements were included in the 1968 statements.

iii. Development of projects

- 2.59 Loan 158/OC-AR provides financing for part of the highway project to Bolivia and of the Corrientes-Barranqueras Bridge subproject. The part of the Bolivian highway subproject financed out of resources from that loan includes the construction and improvement of two road stretches covering a total length of approximately 170 km. on Highways 9 and 34 linking Argentine territory to the Bolivian border. The Corrientes-Barranqueras Bridge subproject covers the construction of a bridge over the Paraná River, together with related feeder roads to link the cities of Corrientes and Barranqueras. Up to June 30, 1970, nine months following signature of the loan contract, 88.1% of the total loan had been committed. With regard to the physical progress of work financed under this loan, the two road stretches are now under construction and are expected to be completed within the terms established by the respective contracts. With regard to the Corrientes-Barranqueras Bridge, construction is fairly advanced, in spite of initial delays due to the fact that the subsoil conditions found were not those expected and that, as a result, it was necessary to redesign the foundations of these. This involved modifications in the bridge's substructure and a sizable increase in this subproject's work to be covered by DNV resources.
- 2.60 Loan 170/SF-AR, together with the local contribution, provided the balance of the financing required for the Bolivian subproject and part of Chile. The part of the Bolivian highway subproject financed out of loan resources includes the construction and improvement of four stretches, covering a total length of 389.2 km. on Highways 34 and 50 connecting Argentine territory with the Bolivian border. The Chilean highway subproject, also

partly financed out of these loan resources, involves the construction and improvement of five road sections with a total combined length of 145.6 km. on part of Highway 7 linking Argentine and Chilean territories. In addition, this subproject also provides for improvements to the Caracoles Tunnel. Up to June 30, 1970, 80% of the total amount loaned had been committed. With regard to physical progress of works financed out of this loan, 384 km. of highway are under construction and it is estimated that work under the corresponding contracts will be concluded by the dates scheduled. At present, the only contracts which have still to be signed are those covering the stretches from Uspallata to the Tunnel and from Pichanal to Ballivian, covering 94 km. and 56.8 km. respectively. In this case as well, it is felt that the work under construction will be concluded in accordance with the schedule planned. With regard to the Caracoles Tunnel subproject, the services of an expert have been contracted. He will be responsible for the execution of modification and adaptation studies of this tunnel, to allow for combined rail and road traffic.

- 2.61 Up to June 30, 1970, it was estimated that overall physical progress on this program had reached the 15% level, although - in accordance with the original forecast - it should in fact have reached 20%. It is expected, however, that progress will reach the 65% level by December 31, 1970, in accordance with original forecasts. This assumption is based on the fact that 87% of the works covered by the program already have signed construction contracts.

iv. Situation to June 30, 1970

- 2.62 The status of loans 158/OC-AR and 170/SF-AR to June 30, 1970 was as follows:

Loan 158/OC-AR:	Total disbursed	US\$ 2,372,324.00 - 18.4%
	Current c.c.	- -
	Undisbursed balance	10,477,676.00 - 81.6%
	Amount of loan	US\$12,850,000.00 - 100.0%
Loan 170/SF-AR:	Total disbursed	US\$ 1,073,183.00 - 5.1%
	Current c.c.	- -
	Undisbursed balance	20,076,817.00 - 94.9%
	Amount of loan	US\$21,150,000.00 - 100.0%

As the above figures show, the amount disbursed under the two loans represents approximately 10% of the total, although physical progress is estimated to have reached approximately 15%. It should be noted, however, that the Bank has already approved the execution of works and has given its approval to contracts involving some 87% of the works to be completed under the program.

v. Domestic resources

- 2.63 Along with the IDB contribution, local investments totaled the equivalent of US\$2,830,000, thus resulting in a 46:54 ratio of IDB investments to borrower contributions. The ratio of the IDB contribution to the local contributions was established as 47:53 in the loan contracts, for the total of the program, whose cost was estimated at the equivalent of US\$72,060,000.
- 2.64 According to projections prepared by the DNV, total disbursements for the two loans will amount to US\$4,686,000 at the end of 1970, and local counterpart funds will amount to the equivalent of US\$8,017,000, representing contributions of 42% and 58% respectively.

vi. Conclusion

- 2.65 Except for a minor delay (see paragraph 2.61), the program is developing normally. Furthermore, bearing in mind the fact that as most of the construction contracts have already been signed and that these will have to be executed within the terms agreed upon, no major difficulties are anticipated in the normal progress of program execution.

e. Loans from Other International Financing Agencies

- 2.66 In addition to loans already obtained from the IDB, commented upon in the preceding section, the DNV received loans from other international financing agencies; their status to May 31, 1970, can be summarized as follows:

TABLE VIII  
FOREIGN LOANS TO THE DNV <sup>1/</sup>  
STATUS TO MAY 31, 1970  
(In US\$ thousands)

Agency	Date	Original amount	Amount canceled	Disbursements	Undisbursed balance	Amount amortized	Unamortized balance
EXIMBANK (826-A)	5/30/57	4,749	-	4,749	-	2,528	2,221
EXIMBANK (1409)	5/24/61	40,000	20,759 <sup>2/</sup>	19,241	-	9,099	10,142
USAID (510-L-004)	5/26/61	6,000	-	6,000	-	179	5,821
USAID (510-L-007)	1/21/63	6,700	-	6,700	-	-	6,700
USAID (510-L-008)	3/18/63	30,500	-	29,707	793	-	29,707
USAID (510-L-010)	6/3/63	3,700	-	2,255	1,445	-	2,255
IBRD (288AR)	6/30/61	48,500	17,549 <sup>3/</sup>	30,951	-	9,222	21,729
IBRD (619AR)	6/24/69	25,000	-	-	25,000	-	-
Total		165,149	38,308	99,603	27,238	21,028	78,575

1/ Excluding IDB loans.

2/ This amount of US\$20.8 million was canceled in 1966, at the DNV's request. It covered maintenance equipment to be imported which the DNV felt it unnecessary to include as part of the project.

3/ US\$16.5 million was canceled in July 1965 at the request of the DNV for the same reasons given in the partial cancellation of the EXIMBANK loan. Subsequently, an amount of US\$1,049,000 was canceled.

2.67 As will be noted from the above table, the DNV obtained loans from other international financing agencies between 1967 and 1969 involving an amount of US\$126.8 million (excluding cancellations), of which US\$99.6 million (or 78.5%) has already been utilized.

2.68 During recent years, the DNV has also made use of foreign suppliers' credits to purchase equipment for a total value of US\$2.9 million, of which some 56% covered purchases from United States suppliers.

f. Conclusions on DNV Institutional and Financial Technical Capacity

2.69 The DNV has broad experience in the execution of highway works and possesses qualified technical personnel and adequate sources of funds. In summary, this analysis leads to the conclusion that programs for Mesopotamia roads and interconnection with Uruguay will be properly executed by the DNV from a technical and financial standpoint.

2. Comisión Técnica Mixta del Puente entre Argentina y Uruguay (COMPAU)

a. General aspects

2.70 With an exchange of notes dated November 23, 1960, the Republic of Argentina and the Republic of Uruguay set up COMPAU to cover preliminary technical studies required in the preparation of a project for an international bridge over the Uruguay River in the Puerto Unzué, in Argentina and the Fray Bentos area in Uruguay. Subsequently, both countries entered into an agreement, dated May 30, 1967, approving the work done by COMPAU and charging this agency with the responsibility for adopting the measures required for construction of the bridge. The agreement, which was ratified in Montevideo on October 17, 1967, in addition to appointing it to carry out the job noted, entrusts COMPAU with the functions of implementing, administering and maintaining the project.

b. Juridical capacity

2.71 COMPAU is an international organization with the juridical capacity to fulfill its specific objectives, in accordance with the agreement and by-laws. It is empowered to acquire rights, to contract obligations and to enter into such acts and contracts as may be required to fulfill its objectives.

2.72 COMPAU's head office is located in the city of Montevideo. It was established in accordance with the agreement and its by-laws in all matters pertaining to its organization and operations.

2.73 COMPAU maintains relations with the Governments of Argentina and Uruguay through their respective Ministries of Foreign Affairs, and it is required to keep these ministries informed of its activities.

c. COMPAU's attributions

2.74 COMPAU's main attributions for the construction of the Fray Bentos-Puerto Unzué Bridge and its future management are as follows:

- (a) To prepare budgets covering the main project and supplementary works.
- (b) To propose such expropriation of land and buildings as are required.
- (c) To effect calls for public and international bids, to select firms and to award construction contracts.
- (d) To invite public international bids for the construction of works.
- (e) To inform the respective governments of the results of their review and study of competing bids submitted, recommending approval and/or the award of contracts, as appropriate.
- (f) To supervise the fulfillment of contracts agreed upon.
- (g) To receive the partial or total, provisional or final delivery of works and installations contracted for.
- (h) To approve works certificates and to effect the corresponding payments.
- (i) To impose standards and/or provisions to be enacted within the borders of each country during the construction of and/or operation of the bridge.
- (j) To propose toll rates.
- (k) To appoint and remove personnel hired to fulfill its objectives.
- (l) To purchase goods required for its activities.
- (m) To negotiate directly with the respective customs offices for the free transit of vehicles, vessels, tools and any other article required to be transported from one territory to the other, in fulfillment of the objectives for which it was established, which items shall be admitted free of any duty or other tax.
- (n) To prepare its operations budget.
- (o) To submit to the Governments of Uruguay and Argentina statements of accounts and investments effected for account of COMPAU.

d. Organization

i. Structure

- 2.75 To date, COMPAU's efforts have been concentrated on formulating and preparing the project. Consequently, its organizational structure is extremely rudimentary. According to its charter, COMPAU is composed of two delegations, one from Argentina and the other from Uruguay, consisting of eight members chosen from among professionals of recognized standing in various fields; mainly engineers. Each delegation has its own chairman and secretary.

- 2.76 The management of COMPAU consists of a President, a Secretary, a Treasurer and an Assistant Treasurer. The presidency of COMPAU rotates between the chairman of the two delegations, for periods of six months each. The same principle applies in the case of the offices of Secretary, Treasurer and Assistant Treasurer, so that when the presidency is held by one delegation, the treasury is held by a member of the same delegation, while the offices of Secretary and Assistant Treasurer are held by members of the other delegation. Although this causes the management to change every six months, its continuity is not affected by these changes.
- 2.77 The President directs the work of meetings and is an ex officio member of the Board of Directors. The Secretary assists the President in the preparation of all documents involving registers of acts of the agency, and is also an ex officio member of the Board of Directors. The Treasurer is responsible for controlling the accounts for all COMPAU funds, and the Assistant Treasurer assists the Treasurer in carrying out these functions. The President and Secretary of COMPAU, as members of the Board of Directors, are responsible for drawing up resolutions of the agency, which has no decision-making powers. COMPAU is represented by its President.
- 2.78 In the event that the proposed loan is granted and works awarded, COMPAU would reach a new stage leading to a considerable increase in its activities. This would result in: (a) the establishment of an executive unit within COMPAU; (b) an increase in administrative and financial personnel; (c) contracting for the services of a consulting firm for the technical management of works; and (d) contracting the services of a firm or firms of independent public accountants to prepare, set up and put into operation an accounting system to meet its needs, as well as to supervise and audit the operation of that system.<sup>1/</sup>
- 2.79 In order to comply with item (a) of the previous paragraph, the executive unit would be subdivided into three sections, namely the accounting, treasury and administrative sections. The basic functions of the accounting sections would be to control, record and effect all accounting operations reflecting activities carried out during construction of the bridge and subsequently during the operations and maintenance stage. The treasury section would be responsible for handling funds and securities entrusted to COMPAU and, finally, the administrative section would supervise all general administrative matters, personnel administration and such other functions as may be assigned to it. The executive unit would be managed by the project executive director, who would be a highly qualified professional with a civil engineering degree, and, if possible,

<sup>1/</sup> With regard to the nature of items c and d, see the chapter on conclusions and recommendations of this document. In addition, the terms of reference defining the nature of the services to be provided by consulting engineers and by the firm of consultants are summarized in paragraphs 3.50 and 3.51 and described in greater detail in Appendices 18, 18a, 18b and 18c of Annex I to this document.

specializing in bridges. <sup>1/</sup> In addition, the unit would have a minimum of three high-level professionals, apart from appropriate support personnel. Appendix I shows COMPAU's proposed organizational chart both during the bridge construction period as well as subsequently during its operational stage; this chart is felt to be satisfactory.

2.80 The executive unit's main functions would be the following:

- (a) To serve as a liaison agency covering COMPAU's relations with the consultants, contractors and the IDB and to maintain the coordination required with the appropriate authorities in Argentina and Uruguay as regards the execution of supplementary works required in the construction of the bridge;
- (b) To issue instructions to consultants and contractors;
- (c) To approve work certificates and any amendments thereto;
- (d) To process payment orders and to supervise their implementation;
- (e) To formulate disbursement requests to the IDB as well as to both governments and to undertake the necessary processing;
- (f) To provide all the elements and facilities required by the independent public accountants contracted to study the COMPAU accounting system, supervising execution of the tasks entrusted to these accountants or to the auditors;
- (g) To prepare all measures required in the invitations to bid, to issue notices of meetings, to study bids submitted, to make short lists of suitable offers and to recommend contract awards to the COMPAU Board of Directors;
- (h) To carry out such other functions entrusted to it by the COMPAU Board of Directors.

ii. Personnel

2.81 During the bridge construction period, COMPAU will have on hand the following personnel:

<sup>1/</sup> Contracting of this engineer would be a condition precedent to the first disbursement. See the chapter on conclusions and recommendations in this document.



Executive Personnel

Project Executive Director (engineer)	1
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Technical and Administrative Personnel

Accounts Chief (accountant)	1
Engineer	1
Assistant to Engineer	2
Office Supervisor, Typists	3
Draftsman	1
Secretaries	2
Accounts Assistant	1
Office Assistant	1
Others	3

Total	<u>16</u>
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2.82 The project executive director will act as general office manager and will be COMPAU's principal executive officer during the construction period. This physical centralization of functions, carrying with it a broad delegation of authority to the executive director on the part of COMPAU, is absolutely necessary to give the greatest possible degree of flexibility and speed in implementing the project, thus avoiding delays and other problems. This situation would cease once the project is completed.

2.83 Once the bridge is open for traffic, the following additional administrative personnel would be required:

Treasurer-Cashier	1
Administrative Chief	1
Accounts Assistants	2
Assistant Cashier-Toll Collectors	4

Total	<u>8</u>
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It should be noted that, in the operational stage, the work of bridge administration will be very simple and no problems are anticipated in this area. Chapter III describes the steps to be taken for bridge maintenance.

iii. Accounting system

2.84 The fact is that, to date, COMPAU has not had an accounting system as such and this is directly related to the following circumstances:

- (a) COMPAU executives, who are in part employees of their respective governments, have contributed their services with only the cost of one secretary and one messenger being charged to COMPAU funds;
- (b) Appropriations for other services and for the purchase of furnishings and equipment have been insignificant;
- (c) Expenses of delegation members have been paid by their respective governments, and
- (d) The only significant investments effected until the arrival of the negotiation mission (March 1970) were those relating to feasibility studies. This expenditure has been duly accounted for.

iv. Financial resources

- 2.85 Resources available to COMPAU up to the present were provided by the Governments of Uruguay and Argentina in equal amounts. These contributions will continue to the extent that toll collections do not cover COMPAU's operating expenses and project maintenance costs. Once toll collections cover these needs and once a reserve has been built up to cover an amount at least equivalent to the bridge's operating expenses for three months, COMPAU would transfer all surpluses collected to the respective governments, in proportion to the contribution made by each to the project.
- 2.86 COMPAU's operating expenses to December 31, 1969, amounted to the equivalent of US\$5,485, covering the payment of personnel expenses and general services. In addition to these expenses, the Governments of Argentina and Uruguay financed preliminary technical studies and feasibility and engineering studies of the bridge out of their own resources. The cost of these studies amounted to US\$680,000. The statement of project costs contains an allocation of US\$340,000 relating to Argentina's contribution to financing for these studies.
- 2.87 As a result of the expansion of COMPAU activities during the current year, it is expected that the operating budget for 1970 will increase to US\$13,000. This figure is almost 2-1/2 times the amount shown in the budget prepared in 1969; given the circumstances under which COMPAU is operating at this time, this figure is considered reasonable.
- 2.88 It is estimated that the annual COMPAU operational budget will amount to US\$60,000 during the construction period for the project and that, once the bridge is opened up to traffic, this figure will be reduced to US\$44,000.
- 2.89 The following table shows operating and maintenance expenses, together with financial and amortization costs relating to the Bank's loans to Argentina and Uruguay, compared with estimates of toll collections:

(In the equivalent of US\$ thousands)

	I	II	III	IV	V	VI
I. <u>Tolls Collected</u> 1/	759	886	976	1,042	1,174	1,193
II. <u>Total Expenditures</u>	230	241	252	265	278	292
Operating expenditures	55	61	67	74	81	89
Maintenance expenditures	175	180	185	191	197	203
III. <u>Balance Available</u>	529	645	724	777	896	901
IV. <u>Financing and Amortization Costs</u>	1,578	1,523	1,473	1,427	1,377	1,315
Available % of IV	33.5%	42.4%	49.2%	54.4%	65.1%	69.0%

- 2.90 As the previous table shows, during the bridge's first years of operation, the estimated income from tolls collected will cover operating and maintenance expenses, leaving a surplus available to cover part of the financial and amortization costs of the IDB loan. Similarly, it will be noted that the surplus shows a steady upward trend, mainly as a result of higher toll collections resulting from the sustained increase in traffic anticipated. The surpluses available, which, during the first year of bridge operation, will cover only 35% of financial costs of the IDB loans, would cover 69% of these obligations during the sixth year.

#### v. Audit

- 2.91 The audit function has been carried out internally on a very rudimentary basis. COMPAU has planned to have its accounting system organized by a firm of consultants and to entrust annual external audits to a firm of independent auditors acceptable to the IDB (see paragraph 2.78).

#### C. Guarantee

- 2.92 The general responsibility of the debtor.

1/ According to calculations worked out by the Buenos Aires firm of Cueto Rua, which conducted the financial research for the feasibility study on behalf of Tudor Engineering Company-Hidrosud of Argentina.

### III. THE PROGRAM

#### A. Background

##### 1. Development of the Argentine Highway System

- 3.01 In 1930, the National Road Law (Law 11,658) created a new institutional financial, economic and administrative system for the purpose of drawing up a nationwide arterial highway system and of planning, building and maintaining the works needed for its operation.
- 3.02 In 1933, a national road network was laid out for the first time to give Argentina a road infrastructure that could meet the demands of the country's economy. Thus, a network of 45,000 km. was charted which was developed in every part of the country. In 1936, it was decided to modify the original network and a 15-year plan was devised which readjusted the network to a total of 47,000 km. Several further changes were made later to bring needs into line with resources.
- 3.03 At the request of the Argentine Government, based on a recommendation by a mission of the United Nations Special Fund and the International Bank for Reconstruction and Development, a group of foreign experts and Argentine technicians drew up, in 1960, a long-term general transportation plan (excluding air and urban transport) for the country, for execution under three-year plans to allow periodic reassessment of the scale of priorities stated in that plan. Some of the plan recommendations were adopted by the Dirección Nacional de Vialidad (DNV), and those which have not lost their relevance are still being implemented today.
- 3.04 Under the three-year Plan for the 1968-70 period, the Dirección Nacional de Vialidad was able to carry out a series of works that had been postponed several times and could not possibly be put off any longer. This plan covered 12,345 km., of which 71% has been completed to date. This may be said to mark the point of departure of the new highway policy, which has been characterized by the allocation of much more money to the DNV than ever before. This agency recently approved a restructuring of the arterial highway network and has submitted the corresponding bill of law through the Department of Public Works to the Executive Branch for approval. The restructuring was governed by new requirements of the economy, of national integration, of economic development, of safety and of coordination with other means of transport.
- 3.05 One of the principal aims of the Dirección Nacional de Vialidad is to assure that the national arterial network remains permanently passable. This aim has not yet been achieved, and it is estimated that only 65% of the roads will be permanently passable by the close of the current year. The DNV has prepared a tentative plan for the next five years that is intended to raise the proportion of permanently passable routes

to about 77%. The plan includes continuation of the works now in progress and the launching of a new works program tailored to the integrative function of the arterial network. The national road network now measures a total of 42,836 km., consisting of 5,705 km. of first-class paved roads, 11,247 km. of second-class paved roads, 8,120 km. of improved-surface roads, 15,526 km. of dirt roads and 2,238 km. of trails.

- 3.06 For the period 1971-74, the DNV has scheduled US\$746.6 million in public works investments and US\$1,326.9 million in total outlays. The level of expected investment in that period remains fairly high but it is not expected to rise as rapidly as it did in 1968-70. The total cost of the program proposed to the IDB is only 11.2% of the investment and 6.3% of the total outlay provided for in the DNV plan.

## 2. The Mesopotamia Road System

- 3.07 The road network of the Mesopotamia region includes 1,820 km. of paved roads, 1,730 km. of improved roads and 11,820 km. of dirt roads. The network does not cover the region uniformly but tends to concentrate in the areas of greatest agricultural development. On the basis of political divisions, the road network of Mesopotamia is distributed as follows:

TABLE IX

### EXTENT OF ROAD NETWORK IN KILOMETERS

Province	Paved	Graveled or improved	Dirt	Total
Entre Ríos	1,050	990	3,600	5,640
Corrientes	610	740	5,500	6,850
Misiones	160	-	2,720	2,880
Total	1,820	1,730	11,820	15,370

- 3.08 Of the three Mesopotamia provinces, Entre Ríos has the highest concentration of roads in general and of paved roads in particular, followed by Corrientes and Misiones. A clearer idea of the relative development of the networks is conveyed by the road density per unit area:

TABLE X  
ROAD DENSITY - KM./1,000 KM<sup>2</sup>

Province	Paved	Graveled or improved	Dirt
Entre Ríos	14.46	13.76	49.96
Corrientes	6.89	8.42	62.29
Misiones	5.31	-	91.24
<u>Total Mesopotamia</u>	<u>9.52</u>	<u>9.13</u>	<u>62.14</u>
Buenos Aires	22.73	2.45	65.15
Córdoba	19.25	5.26	83.50
Santa Fé	16.97	-	134.06
<u>Total Argentina</u>	<u>7.92</u>	<u>9.07</u>	<u>54.87</u>

- 3.09 In Mesopotamia, the greatest development has been on the roads running parallel to the Paraná River. Execution of road plans in progress or programmed will shortly result in an entirely paved stretch between Puerto Iguazú and Brazo Largo along the bank of the Uruguay River. There is little paved road surface beyond this trunk route since there is no link of this class between eastern and western Mesopotamia apart from the road from Guaileguay to Guaileguaychu at the southern end of the region. Gravel-improved roads have been much used in the eastern parts of Entre Ríos and Corrientes provinces.

B. Description

- 3.10 The program to be partly financed with the IDB resources is part of the general road plan to be executed in the Mesopotamia region and calls for the construction of about 2,400 km. of arterial highways at a total cost on the order of US\$200 million, about 1,125 km. of secondary roads at a total cost of US\$50 million and the building of several bridges across rivers in the region.
- 3.11 With the completion of the tunnel under the Paraná River between Paraná and Santa Fé, of the Corrientes-Barranquera bridge and the proposed combined Zárate-Brazo Largo crossing,<sup>1/</sup> the Mesopotamia region will for the first time have overland connections with the rest of the country.

<sup>1/</sup> The tunnel is already open to traffic, and the bridge is under construction with IDB financing. The third project will be executed by the DNV and financed with suppliers' credits and the foreign exchange proceeds from public bonds. The Zárate-Brazo Largo bridge will be operated by the DNV as a toll bridge. The chapter on conclusions and recommendations of this document includes a clause making the first disbursement under any of the three loans contingent upon presentation to the Bank of the signed contract for construction of the Zárate-Brazo Largo bridge.

- 3.12 The purpose of the proposed program is not only to knit the Mesopotamia provincial economies closer together by providing roads to join their major population and production centers, but also to link these provinces to the Greater Buenos Aires area. This latter area uses 54% of the electric power and 60% of the steel consumed in the country, it accounts for one third of the Argentine population, 70% of bank deposits and 72% of bank loans in the country. Any province that is poorly connected with Buenos Aires may be expected to develop slowly.
- 3.13 In addition to improving the road infrastructure of southern Mesopotamia, the program would link the metropolitan area of Argentina with the Provinces of Entre Ríos, Corrientes and Misiones and stimulate greater integration of the region and of the country with its neighbors to the east and north across the Fray Bentos-Puerto Unzué International Bridge. Construction of the arterial highways provided under the program, the roads that would feed into them and the International Bridge to Uruguay would end the isolation of the Mesopotamia region from the rest of the country and establish a link of physical integration with Uruguay that would lead to better exploitation and development of the region's resources.
- 3.14 The program divides into three projects: the national highways project, the Fray Bentos-Puerto Unzué International Bridge project and the provincial roads project, which are described in the sections that follow. The technical and economic feasibility studies for the national highways and Fray Bentos-Puerto Unzué projects have been completed and include the final engineering designs. In the case of the provincial roads project, the economic feasibility studies are ready for the roads located in Entre Ríos Province, except for those relating to the stretch between Urdinarrain and Provincial Route 15, and the studies on the various roads in Corrientes Province are nearing completion. The final engineering designs for the roads under this project will be concluded this year (see paragraphs 3.41, 3.42 and 3.43).

1. National Highways Project

- 3.15 The works under this project consist of the construction of earthworks and drainage and the paving with asphalt concrete of 215 km. of the following sections of national highways:

a.	<u>National Route 12</u>	
	Brazo Largo to Ceibas	45.5 km.
	Ceibas to Médanos	26.2 km.
	Médanos to Gualeguay	37.7 km.
b.	<u>National Route 14</u>	
	Ceibas to Sauce	43.0 km.
	Sauce to junction with Provincial Route 20	30.4 km.
c.	<u>National route unnumbered</u>	
	Junction National Route 14 with Fray Bentos-Puerto Unzué International Bridge	32.0 km.
	T O T A L	214.8 km.

- 3.16 The appropriate geometrical design of the national highways was arrived at on the basis of the following two factors in combination: a) the type of traffic to be carried by each highway, and b) the terrain traversed by the road. The designs for the highways under the project are regarded as adequate to bear present and future traffic loads throughout the service life of the roads, which is calculated at 25 years.

## 2. Fray Bentos - Puerto Unzué International Bridge Project

- 3.17 This project calls for the construction of a bridge across the Uruguay River, and its approaches, between the towns of Puerto Unzué, Entre Ríos Province, Argentina, and Fray Bentos, Río Negro Department, Uruguay, for a length of about 5.4 km. The extremities of the work are the two points identified on the site by milestones A<sub>1</sub> (Argentine side, km. 0.4555) and U<sub>1</sub> (Uruguayan side, km. 5.821), which are 5.367 km. apart. The roadway is 8.50 m. wide to accommodate vehicular traffic in both directions, and there are two 1.50 m. wide footways for pedestrians.

- 3.18 The work is divided into the following sections: a) one main span over the navigable channel of the Uruguay River, 220 m. long and 36 m. high above zero at Fray Bentos; b) two 145 m. long spans contiguous to the main span; c) 24 secondary spans 70 m. long each, 17 of them on the Argentine and seven on the Uruguayan side; d) two 55 m. long transition spans, one on each side; e) a viaduct on the Argentine side consisting of 26 spans 41.05 m. long each, and a final span 40.52 m. long between pier and abutment; f) approach works (embankment) between A<sub>1</sub> 0.455 km. and 2.07765 km. on the Argentine and U<sub>1</sub> 5.486 km. and 5.82188 km. on the Uruguayan side.

- 3.19 The superstructure of the bridge is of prefabricated and prestressed reinforced concrete. The main and secondary spans will be built of isostatic box girders consisting of a double bracket that receives on its ends the weight of the 40 m. long suspended spans. The rest of the bridge, that is, the viaduct superstructure, consists of simply supported 40 m. long reinforced concrete girders. The girders and piers are of reinforced concrete and are made in situ. The bridge will be provided with suitable lighting and traffic signals on the roadway and footways to facilitate the passage of vehicles and pedestrians. Also, the four piers and the spans over the channel will be illuminated for the passage of vessels and provided with tide gauges, current meters, traffic lights and sirens as aids to navigation.

## 3. Provincial Roads Project

- 3.20 This project encompasses the construction, improvement and reconstruction of about 610 km. of provincial roads that will feed into the national highways in the Provinces of Entre Ríos and Corrientes, and particularly into those of the above national highways project. As noted above, the economic feasibility studies on the roads in



Corrientes Province and on the stretch between Urdinarrain and Provincial Route 15 are almost completed. Hence the road sections indicated for Corrientes Province are tentative and could be replaced by others. The chapter on conclusions and recommendations at the end of this document includes a clause establishing that the first disbursement for any of these roads or any road substitution under the project would be subject to presentation of the studies confirming its technical and economic feasibility. The road sections selected at present are as follows:

Entre Ríos Province 1/

Basic works and paving

Provincial Route 13 Nogoyá to junction Provincial Route 11	86 km.
Provincial Route 15 Rosario de Tala to junction National Route 18	63 km.
Provincial Route 19 Lucas González to junction Provincial Route 15	49 km.
Provincial Route 19 junction Provincial Route 15 to Urdinarrain	<u>35 km.</u>
Subtotal	233 km.

Reconstruction

Provincial Route 16 Gualeguay to Gualeguaychú	80 km.
Provincial Route 20 Gualeguaychú to Basavilbaso	<u>95 km.</u>
Subtotal	175 km.
Provincial total	408 km.

Corrientes Province 2/

Basic works and paving

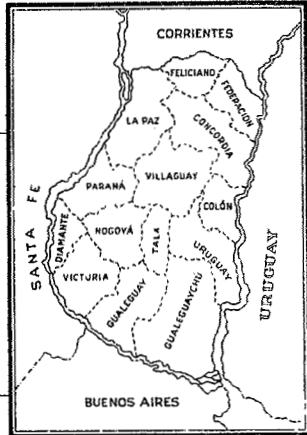
Provincial Route 6 National Route 12 to Provincial Route 17	87 km.
Provincial Route 41 junction National Route 12 to junction Provincial Route 37	37 km.
Provincial Route 37 Provincial Route 41 to junction Provincial Route 14	51 km.
Provincial Route 25 junction National Route 122 to junction National Route 127	<u>27 km.</u>
Provincial total	202 km.
Total works	610 km.

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1/ Economic feasibility studies have already been completed on all the road sections in Entre Ríos Province except the 35 km. between Urdinarrain and Provincial Route 15.

2/ The economic feasibility studies are in preparation and are expected to be presented to the Bank for approval before the close of 1970.

DIVISIÓN DEPARTAMENTAL



SITUACIÓN RELATIVA



# PROVINCIA DE ENTRE RÍOS

REPÚBLICA ARGENTINA

17°

OBRAS PROVINCIALES A FINANCIAR POR EL B.I.D.

CORRIENTES

SANTA FE

ROSARIO

BUENOS AIRES

CRUCE VIAL EN PARANÁ



S.E.O.P. DIR. GRL. DE PLANEAMIENTO. DIV. CARTOGRAFIA

DIR. NAC. DE VIALIDAD

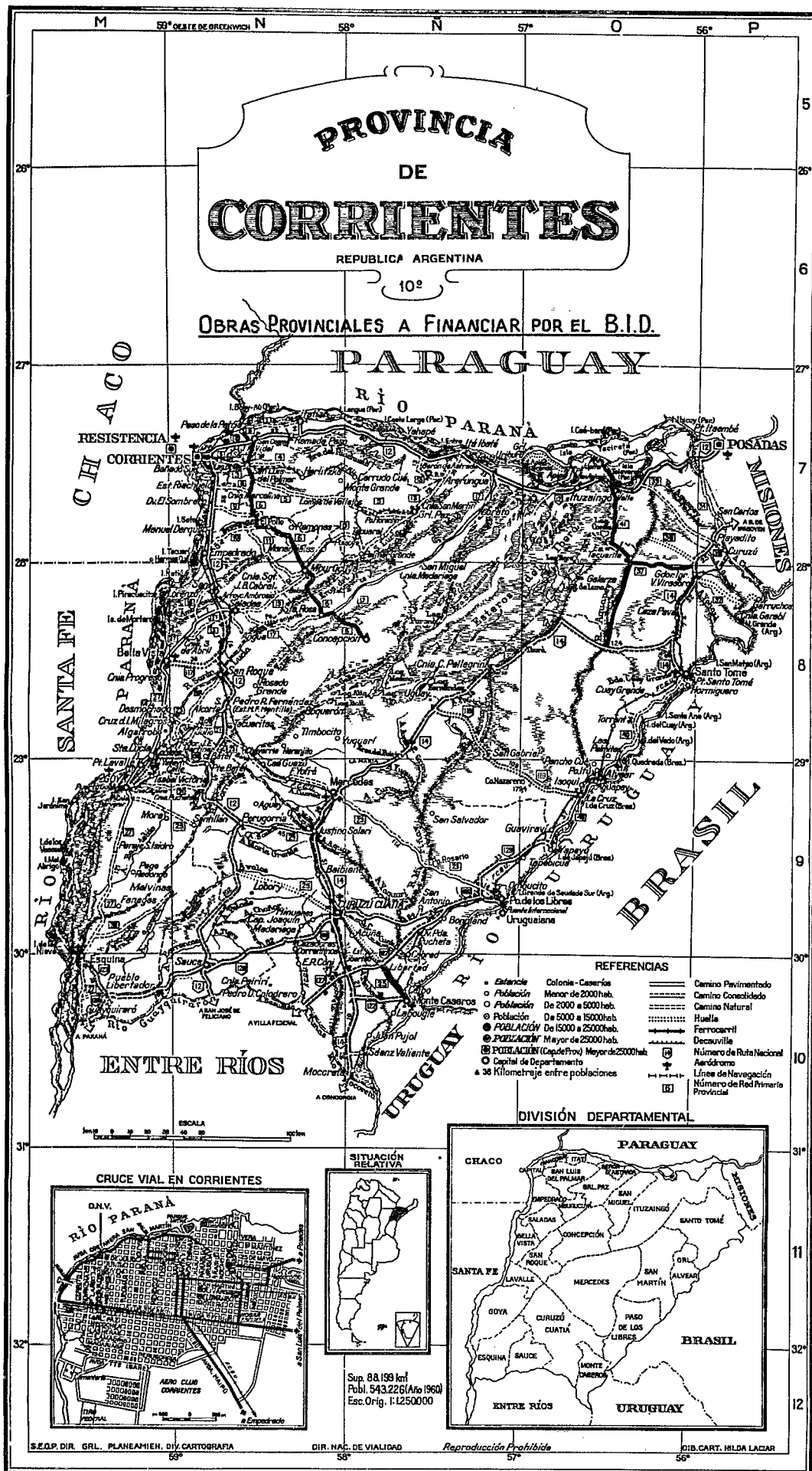
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DIB. CART. F. L. PINTURE - H. LALLAR

REFERENCIAS

- Estancia
- Población Menor de 2000 hab.
- Población De 2000 a 5000 hab.
- Población De 5000 a 15000 hab.
- POBLACION De 15000 a 25000 hab.
- POBLACION Mayor de 25000 hab.
- POBLACION (Cap. de prov.) Mayor de 25000 hab.
- ⊙ Capital de Departamento
- 79 a. Kilometraje entre poblaciones
- Colonia - Caserio
- Menor de 2000 hab.
- De 2000 a 5000 hab.
- De 5000 a 15000 hab.
- De 15000 a 25000 hab.
- Mayor de 25000 hab.
- (Cap. de prov.) Mayor de 25000 hab.
- Camino Pavimentado
- Camino Consolidado
- Camino Natural
- Huella
- Ferrocarril
- Numero de Ruta Nacional
- Aerodromo
- Numero de Ref. Primaria Provincial

ESCALA  
km 0 10 20 30 40 50 60 km



- 3.21 The geometrical characteristics of the provincial roads have also been decided in the light of the kind of traffic they will bear and the terrain traversed by each.

C. Total Cost

- 3.22 The program to be executed in Argentine territory and to whose financing the loan proceeds would contribute would cost an estimated total equivalent to US\$83.7 million, of which 48.9% would be allocated to the national highways project, 15.7% to the Fray Bentos-Puerto Unzué Bridge project and 35.4% to the provincial roads project.<sup>1/</sup>

1. Cost of National Highways Project

- 3.23 The cost of the national highways project comes to the equivalent of US\$40.9 million, which breaks down into the following components:

TABLE XI  
NATIONAL HIGHWAYS PROJECT  
(Equivalents in US\$ millions)

Item	Cost in			Local		%
	Direct	Indirect	Total	Cost	Total	
a. <u>Construction (215 km.)</u>	-	4,883	4,883	27,725	32,608	79.7
Nat'l Rte 12 Brazo Largo-Ceibas	-	3,304	3,304	10,815	14,119	34.5
Nat'l Rte 12 Ceibas-Médanos	-	292	292	3,277	3,569	8.7
Nat'l Rte 12 Médanos-Guaqueguay	-	424	424	4,134	4,558	11.1
Nat'l Rte 14 Ceibas-Sauce	-	355	355	4,006	4,361	10.7
Nat'l Rte 14 Sauce-Junction	-					
Prov. Rte 20	-	252	252	2,736	2,988	7.3
-Junction Nat'l Rte	-					
14 - Bridge	-	256	256	2,757	3,013	7.4
b. <u>Contingencies</u>	-	732	732	3,748	4,480	11.0
Construction	-	254	254	990	1,244	3.0
Cost increases	-	478	478	2,758	3,236	8.0
c. <u>Supervision and administration</u>	-	-	-	1,660	1,660	4.1
d. <u>Feasibility studies</u>	-	-	-	335	335	0.8
e. <u>Other costs</u>	1,617	-	1,617	200	1,817	4.4
Interest	1,315	-	1,315	170	1,485	3.6
Commitment fee	217	-	217	30	247	0.6
IDB inspection and supervision	85	-	85	-	85	0.2
Total	1,617	5,615	7,232	33,668	40,900	100.0

<sup>1/</sup> The possible effect of the peso devaluation of June 18, 1970, on the cost of the program was considered, and it was not deemed necessary to adjust its total cost or the loan amounts. See Appendix K for further details.

- 3.24 The costs tabulated above were examined by a consortium of engineering consulting firms <sup>1/</sup> and verified by the technical units of the Bank. The budget estimates are based on the unit prices of recent similar works. In addition, the computations of building quantities reflect the results obtained from calculation of the various works items determined for each road section. Finally, the total cost of the project includes, in addition to the net construction cost, estimates for contingencies, general expenses and engineering services.
- 3.25 In determining the net construction costs, the consultants made an analysis of unit prices that covered a review of the laws and agreements on wages, costs for equipment and machinery, costs for transportation, fuel and lubricants, outputs of equipment and labor, proportions and specific bases of inputs of materials, recent price quotations and public bidding results, together with data on variations in the costs of the Dirección Nacional de Vialidad.

## 2. Cost of the Fray Bentos-Puerto Unzué Bridge Project

- 3.26 The total cost of the bridge is estimated at the equivalent of US\$18,680,000. It has been agreed that Argentina is to pay 71.7% and Uruguay 28.3% of the following cost items: i) the physical construction of the bridge; ii) the hiring of consultants to supervise that construction; iii) COMPAU's administrative expenses during the construction period, and iv) contingencies. For Argentina these items add up to the equivalent of US\$10,996,000. The costs of the feasibility and engineering studies were borne equally by the two countries, with Argentina paying the equivalent of US\$340,000.<sup>2/</sup> The foregoing items total the equivalent of US\$11,336,000. Argentina's share of the other costs of the bridge, US\$1,764,000, relates to the financing expenses of the IDB loan and the contribution to the IDB Inspection and Supervision Fund. The foregoing items total US\$13,100,000, which is Argentina's share of the bridge cost. Adding Uruguay's share in the bridge cost, US\$5,580,000 <sup>3/</sup>, gives US\$18,680,000, which is the total cost of the project (see Appendix J).

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<sup>1/</sup> Louis Berger, Inc. and Sociedad Argentina de Estudios S.R.L. (see paragraph 3.41).

<sup>2/</sup> The cost of these studies would be credited to the two governments as part of the local contribution to the project. The cost table (paragraph 3.34) contains an item of US\$340,000 corresponding to the Argentine financing of the studies (see conclusions and recommendations).

<sup>3/</sup> This sum would be partly financed with two IDB loans totaling US\$4.8 million (US\$3.6 million from the Bank's ordinary capital resources and US\$1.2 million from the Argentine resources); the remainder would be the local contribution.

TABLE XII

COST OF THE FRAY BENTOS-PUERTO UNZUE BRIDGE (Argentine share) <sup>1/</sup>

(Equivalent in US\$ thousands)

Item	Cost in Foreign Exchange			Local Currency		%
	Direct	Indirect	Total	Cost	Total	
a. <u>Construction of bridge</u> (71.7% of US\$12,145,425)	1,472	1,969	3,441	5,267	8,708	66.4
b. <u>Feasibility and engineering studies</u> (50% of US\$680,000)	340	-	340	-	340	2.6
c. <u>Consultants to supervise bridge construction</u> (71.7% of US\$600,000)	430	-	430	-	430	3.3
d. <u>COMPAU administrative expenses during construction</u> (71.7% of US\$300,000)	-	-	-	215	215	1.6
e. <u>Contingencies</u>	256	395	651	992	1,643	12.7
Construction (71.7% of US\$1,110,000)	109	198	307	488	795	6.1
Cost increases (71.7% of US\$1,215,000)	147	197	344	504	848	6.6
f. <u>Other costs</u>	1,480	-	1,480	284	1,764	13.4
Interest	1,204	-	1,204	244	1,448	11.0
Commitment fee	196	-	196	40	236	1.8
IDB inspection and supervision	80	-	80	-	80	0.6
Total	3,978	2,364	6,342	6,758	13,100	100.0

3.27 The cost estimates were computed by the consulting firm of Tudor Engineering Company and Hidrosur Argentina. The construction volume was calculated on the final designs of the alternatives studied for the bridge, and the unit prices are in line with recent quotations for similar works. In regard to the method followed, it may be especially noted that detailed cost computations were made for the following items: labor, equipment, permanent materials, expendable materials and subcontracts. To the resultant net cost estimate was added 30% for general expenses, contractor's profit and contingencies. The direct and indirect external costs of the project were computed on the assumption that the direct costs would relate to the steel for prestressing,

<sup>1/</sup> For total bridge cost see Appendix J.

part of the structural steel, 50% of the contractor's general expenses and the Argentine share of the costs of studies, designs and supervision of the project. The indirect costs - 18.2% of the total project cost - consists of depreciation of the equipment to be used in building the bridge.

### 3. Cost of Provincial Roads Project

3.28 The provincial roads project would cost the equivalent of US\$29.7 million, broken down as shown in the following table:

TABLE XIII  
COST OF THE PROVINCIAL ROADS PROJECT  
(Equivalents in US\$ thousands)

<u>Item</u>	<u>Cost in Foreign Exchange</u>			<u>Local Currency</u>		<u>%</u>
	<u>Direct</u>	<u>Indirect</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>	
a. <u>Construction</u> (600 km.)	-	2,267	2,267	18,343	20,610	69.4
<u>Entre Ríos Province</u> (398)		1,500	1,500	12,139	13,639	46.0
PR 13-Nogoyá-junct. PR 11	-	283	283	2,289	2,572	8.7
PR 15-Rosario del Tala-junct. NR 18	-	238	238	1,925	2,163	7.3
PR 19-Lucas González-junct. PR 15	-	158	158	1,279	1,437	4.8
PR 19-junct. PR 15-Urdinarraín	-	159	159	1,284	1,443	4.9
PR 16-Gualeguay-Gualeguaychú	-	244	244	1,978	2,222	7.5
PR 20-Gualeguaychú-Basavilbaso	-	418	418	3,384	3,802	12.8
<u>Corrientes Province</u> (202)	-	767	767	6,204	6,971	23.4
PR 6-Km. 25 NR 12-PR 17	-	330	330	2,672	3,002	10.1
PR 41-junct. NR 12-junct. PR 37	-	140	140	1,137	1,277	4.3
PR 37-PR 41-NR 14	-	194	194	1,566	1,760	5.9
PR 25-junct. NR 122-junct. NR 127	-	103	103	829	932	3.1
b. <u>Contingencies</u>	-	587	587	4,727	5,314	17.9
Construction	-	360	360	2,916	3,276	11.0
Cost increases	-	227	227	1,811	2,038	6.9
c. <u>Supervision and administration</u>	-	-	-	1,195	1,195	4.0
d. <u>Feasibility studies</u>	400	-	400	389	789	2.7
e. <u>Other costs</u>	270	-	270	1,522	1,792	6.0
Interest	-	-	-	1,382	1,382	4.6
Commitment fee	100	-	100	140	240	0.8
IDB inspection and supervision	170	-	170	-	170	0.6
Total	670	2,854	3,524	26,176	29,700	100.0

- 3.29 The consulting firms of Louis Berger, Inc. and Sociedad Argentina de Estudios S.R.L. also made the cost analyses for the Entre Ríos provincial roads using the same criteria that had been applied to determine unit prices in the technical-economic feasibility study of National Route 14 (see paragraphs 3.24 and 3.25).
- 3.30 The construction computations were effected by the following procedure, which is considered adequate:
- A typical cross section was determined;
  - An estimate was made of the minimum earth-moving required to produce a running surface that would permit speeds on the order of 70/80 km. per hour;
  - The volume of graveling, selected earth and surface treatment were calculated at double the required figures, assuming a haulage distance of 100-150 km;
  - The number of large bridges and drains met with in the reconnaissance was determined and the average type of drain defined;
  - A simple design was adopted for the pavement, without the addition of such stabilizers as lime, cement, etc.
- 3.31 The average cost per kilometer established for the roads in Entre Ríos was applied to the roads in Corrientes Province. Because of the limitations of the calculation, however, it was thought best to increase the contingencies proportion to 25%, for both provinces, including an annual 3% allowance to cover increases in construction costs. Indirect imports are estimated at 11% of the construction costs based on a study of these matters for the five sections of National Routes 12 and 14.
- 3.32 The following table summarizes the investments that would be made in each project:

TABLE XIV  
TOTAL PROGRAM COST  
(Equivalent in US\$ thousands)

Mesopotamia Road Program and Interconnection with Uruguay	Cost in Foreign Exchange			Local Currency		%
	Direct	Indirect	Total	Costs	Total	
I - National Highways Project (OC)	1,617	5,615	7,232	33,668	40,900	48.8
II - Fray Bentos-Puerto Unzué Bridge Project (OC)	<u>3,978</u>	<u>2,364</u>	<u>6,342</u>	<u>6,758</u>	<u>13,100</u> <sup>1/</sup>	<u>15.7</u>
Subtotal (I + II)	5,595	7,979	13,574	40,426	54,000	64.5
III - Provincial Roads Project (FSO)	<u>670</u>	<u>2,854</u>	<u>3,524</u>	<u>26,176</u>	<u>29,700</u>	<u>35.5</u>
Total for Program	6,265	10,833	17,098	66,602	83,700	100.0

<sup>1/</sup> Cost of the Argentine part (see Appendix J).



- 3.33 The foregoing table shows that the program as a whole would generate a foreign exchange expenditure in the equivalent of US\$17.1 million, of which US\$6.3 million would be direct and US\$10.8 million indirect costs.

D. Financing Plan

1. General Outline

- 3.34 The financing plan is summarized in the following table by source and use of funds:

TOTAL COST AND FINANCING PLAN FOR THE PROGRAM 1/  
(In US\$ thousands equivalent)

	I D B   L O A N S							LOCAL CONTRIBUTION			TOTAL COST OF THE PROJECT
	CURRENCIES OF USE						LOCAL CURRENCY COST	FOREIGN EXCHANGE COST	TOTAL		
	IN FOREIGN EXCHANGE			TOTAL	IN LOCAL CURRENCY	TOTAL					
	FOR FOREIGN EXCHANGE COSTS										
	DIRECT	INDIRECT	TOTAL								
				FOR LOCAL CURRENCY COSTS							
National Highways Project (OC)	85	5,615	5,700	1,550	7,250	1,250	8,500	30,868	1,532	32,400	40,900
a. Construction (215 Km)	-	4,883	4,883	1,172	6,055	945	7,000	25,608	-	25,608	32,608
b. Contingencies	-	732	732	378	1,110	305	1,415	3,065	-	3,065	4,480
c. Supervision and Administra- tion	-	-	-	-	-	-	-	1,660	-	1,660	1,660
d. Feasibility Studies	-	-	-	-	-	-	-	335	-	335	335
e. Other Expenses	85	-	85	-	85	-	85	200	1,532	1,732	1,817
Interest	-	-	-	-	-	-	-	170	1,315	1,485	1,485
Commitment Fee	-	-	-	-	-	-	-	30	217	247	247
IDB Inspection and Supervision	85	-	85	-	85	-	85	-	-	-	85
Fray Bentos-Puerto Unzué Bridge Project (OC) 2/	2,238	2,364	4,602	1,748	6,350	1,650	8,000	3,360	1,740	5,100	13,100
a. Construction (71.7% of US\$12,145,425)	1,472	1,969	3,441	1,457	4,898	1,376	6,274	2,434	-	2,434	8,708
b. Feasibility and Engineering Studies (50% of US\$680,000)	-	-	-	-	-	-	-	-	340	340	340
c. Consultants to Supervise Bridge Construction (71.7% of US\$600,000)	430	-	430	-	430	-	430	-	-	-	430
d. COMPAU Administrative Ex- penses during Construc- tion (71.7% of US\$300,000)	-	-	-	-	-	-	-	215	-	215	215
e. Contingencies	256	395	651	291	942	274	1,216	427	-	427	1,643
f. Other Expenses	80	-	80	-	80	-	80	284	1,400	1,684	1,764
Interest	-	-	-	-	-	-	-	244	1,204	1,448	1,448
Commitment Fee	-	-	-	-	-	-	-	40	196	236	236
IDB Inspection and Supervision	80	-	80	-	80	-	80	-	-	-	80
SUBTOTAL (I + II)	2,323	7,979	10,302	3,298	13,500	2,900	16,500	34,228	3,272	37,500	54,000
Provincial Roads Project (FSO)	170	2,854	3,024	2,476	5,500	11,500	17,000	12,200	500	12,700	29,700
a. Construction (600 Km)	-	2,267	2,267	1,962	4,229	9,114	13,343	7,267	-	7,267	20,610
Entre Rios Province (398 Km)	-	1,550	1,500	1,298	2,798	6,030	8,828	4,811	-	4,811	13,639
Corrientes Province (202 Km)	-	767	767	664	1,431	3,084	4,515	2,456	-	2,456	6,971
b. Contingencies	-	587	587	514	1,101	2,386	3,487	1,827	-	1,827	5,314
c. Supervision and Administra- tion	-	-	-	-	-	-	-	1,195	-	1,195	1,195
d. Feasibility Studies	-	-	-	-	-	-	-	389	400	789	789
e. Other Expenses	170	-	170	-	170	-	170	1,522	100	1,622	1,792
Interest	-	-	-	-	-	-	-	1,382	-	1,382	1,382
Commitment Fee	-	-	-	-	-	-	-	140	100	240	240
IDB Inspection and Supervision	170	-	170	-	170	-	170	-	-	-	170
PROGRAM TOTAL	2,493	10,833	13,326	5,774	19,000	14,400	33,500	46,428	3,772	50,200	83,700

main differences exist between these figures and those in the technical report which result from rounding and from the composition of the  
encies in which interest will be paid.  
of the Argentine portion.

SOURCE AND USE OF CURRENCIES  
(In US\$ thousands equivalent)

VIAMIA ROAD PROGRAM AND CONNECTION WITH URUGUAY	CURRENCIES OF ORIGIN		CURRENCIES OF USE		TOTAL
	FOREIGN	LOCAL	FOREIGN	LOCAL	
<u>National Highway Project</u>					
IDB Loan (OC)	7,250	1,250	5,700	2,800	8,500
Local Contribution	-	32,400	1,532	30,868	32,400
Subtotal	7,250	33,650	7,232	33,668	40,900
<u>Fray Bentos-Puerto Unzué Bridge Project 1/</u>					
IDB Loan (OC)	6,350	1,650	4,602	3,398	8,000
Local Contribution	-	5,100	1,740	3,360	5,100
Subtotal	6,350	6,750	6,342	6,758	13,100
<u>Subtotal (I + II)</u>					
IDB Loan (OC)	13,600	2,900	10,302	6,198	16,500
Local Contribution	-	37,500	3,272	34,228	37,500
Total	13,600	40,400	13,574	40,426	54,000
<u>Provincial Roads Project</u>					
IDB Local (FSO)	5,500	11,500	3,024	13,976	17,000
Local Contribution	-	12,700	500	12,200	12,700
Total	5,500	24,200	3,524	26,176	29,700
<u>TOTAL PROGRAM</u>	19,100	64,600	17,098	66,602	83,700
<u>IDB Loans</u>	19,100	14,400	13,326	20,174	33,500
OC	13,600	2,900	10,302	6,198	16,500
FSO	5,500	11,500	3,024	13,976	17,000
<u>Local Contribution</u>	-	50,200	3,772	46,428	50,200
Project I	-	32,400	1,532	30,868	32,400
Project II	-	5,100	1,740	3,360	5,100
Project III	-	12,700	500	12,200	12,700

ost of the Argentine portion.

## 2. IDB Loans

- 3.36 The ordinary capital loan for the national roads project would be composed of US\$7,250,000 in foreign currency and US\$1,250,000 in local currency. The foreign currency represents the following: US\$85,000 for direct foreign expenses (IDB inspection), US\$5,615,000 for indirect foreign expenses (depreciation of imported machinery and contingencies) and US\$1,550,000 for local costs. This last amount is approximately equal to the direct foreign expenses (US\$1,532,000) that the debtor would pay for financial charges during the construction period.
- 3.37 The ordinary capital loan for the bridge would be composed of US\$6,350,000 in foreign currency and US\$1,650,000 in local currency. The foreign currency represents the following amounts: US\$2,238,000 for direct foreign expenses (construction materials, consultants for supervision, contingencies and IDB inspection), US\$2,364,000 for indirect foreign expenses (depreciation of imported machinery and contingencies) and US\$1,748,000 for local costs. This last amount is approximately equal to the amount for direct expenses in foreign currency (US\$1,740,000) that the debtor would pay for financial charges during the construction period and the amount paid in foreign currency for feasibility studies.
- 3.38 The loan from the Fund for Special Operations for the provincial roads project would be composed of US\$5,500,000 in foreign currency and US\$11,500,000 in local currency. The foreign currency represents the following amounts: US\$170,000 for direct foreign expenses (IDB inspection), US\$2,854,000 for indirect foreign expenses (depreciation of machinery and contingencies) and US\$2,476,000 for local costs. If from this last amount are deducted the direct expenses in foreign currency that the debtor would finance for the feasibility studies (US\$400,000) and for financial charges in foreign currency during the construction period (US\$100,000), the balance of US\$1,976,000 in foreign currency authorized for local expenses would represent 35.9% of the foreign currency portion of the loan from the Fund for Special Operations.

## 3. Local Contribution

- 3.39 The DNV would contribute to the program the equivalent of US\$50.2 million, of which US\$32.4 million would be for the national highways project, US\$5.1 million for the Argentine part of the Fray Bentos-Puerto Unzué International Bridge project and US\$12.7 million for the provincial roads project. As mentioned in paragraph 2.50, the local contribution for the three loans constitutes only 7.4% of the DNV's resources derived from taxes in the year of their greatest incidence.
- 3.40 It may be concluded from the examination of the sources of funds and financial situation of the DNV (see paragraphs 2.40 to 2.43 and 2.45 to 2.48) that the local contribution would be made without difficulty and on schedule.

## E. Program Execution

### 1. Status of Studies

- 3.41 The technical and economic feasibility studies for the national highways were done by consulting firms contracted by the DNV. The studies on

National Route 12 were performed in 1966 by the firm ITALCONSULT of Rome and financed with resources of the DNV. These studies were revised and updated in 1969 by Louis Berger, Inc and Sociedad Argentina de Estudios S.R.L. as part of the study of the "Zárate-Brazo Largo-National Route 14 Complex", financed with AID and DNV funds. The ITALCONSULT study includes the final engineering designs, which have been accepted by the DNV and found satisfactory by the Bank's technical experts. National Route 14 was studied by the consortium of Louis Berger, Inc. and Sociedad Argentina S.R.L., and the studies include, in addition to the economic justification, the engineering projects for the different sections of the road. The final engineering designs were approved by the DNV and also found satisfactory by the IDB.

- 3.42 The technical and economic feasibility studies for the bridge were done in 1969 by the firms of Tudor Engineering Co. and Hidrosud Argentina, which were contracted for the purpose by COMPAU. The economic-financial feasibility section was prepared under a subcontract by the firm Cueto-Rua y Consultores Asociados under the supervision of the Tudor Engineering Co. The scope of the studies contracted for included the drawing up of final engineering plans for construction of the bridge and the documents for the related bidding, which have already been approved by COMPAU.
- 3.43 The technical and economic feasibility studies for the roads in Entre Ríos Province were done by the Sociedad Argentina de Estudios S.R.L. and Louis Berger, Inc. The roads were selected by the circuit degree method. To complete the analysis, a study was made of the traffic volumes (TMDA) needed to justify a given investment on the roads selected. The feasibility studies on the roads in Corrientes Province have been entrusted to Louis Berger, Inc. and the Sociedad Argentina de Estudios S.R.L., and the same working method will be followed. The final engineering studies for the provincial roads of Entre Ríos and Corrientes will be done by staff of the Dirección Nacional de Vialidad and by consultants, and are expected to be completed by the end of the current year.

## 2. Disbursement Schedule

- 3.44 It is considered that the program could be executed in a period of about 3-1/2 years, in accordance with the following disbursement schedule:

TABLE XVII  
DISBURSEMENT SCHEDULE  
(In US\$ thousands)

PROJECT	YEAR I		YEAR II		YEAR III		YEAR IV <sup>1/</sup>		TOTAL		GENERAL
	IDB	LOCAL	IDB	LOCAL	IDB	LOCAL	IDB	LOCAL	IDB	LOCAL	
National Highways	335	132	2,470	10,568	3,995	15,240	1,700	6,460	8,500	32,400	40,9
Provincial Roads	42	917	5,568	3,281	7,990	5,980	3,400	2,522	17,000	12,700	29,7
Tray Bentos-Puerto Unzué Bridge	<u>20</u>	<u>524</u>	<u>2,620</u>	<u>1,167</u>	<u>3,647</u>	<u>2,335</u>	<u>1,713</u>	<u>1,074</u>	<u>8,000</u>	<u>5,100</u>	<u>13,1</u>
TOTAL	397	1,573	10,658	15,016	15,632	23,555	6,813	10,056	33,500	50,200	83,7
ANNUAL TOTAL	1,970		25,674		39,187		16,869		83,700		
PERCENTAGE .	2.4%		30.7%		46.8%		20.1%		100.0%		

<sup>1/</sup> Six months.

### 3. Execution Procedures

- 3.45 The Dirección Nacional de Vialidad Argentina would let contracts to construction firms for the building of the national highways and provincial roads under the program. In the case of these roads, international public bidding procedures would have to meet the requirements of Argentine law and conform to the standards and procedures established by the Bank. The Fray Bentos-Puerto Unzué International Bridge would also be built under contract by enterprises or consortia that are properly qualified and have, severally or collectively, demonstrated experience in major engineering works similar to this one. In the case of the bridge, the international public bidding procedures will have to accord with both Argentine and Uruguayan law and conform to the standards and procedures established by the Bank. In accordance with the recommendations made by the consultants it is expected that for the National Highway Project there would be five bids amounting to between 3 and 5 million dollars each and one bid amounting to 14 million dollars. For the Provincial Roads Project of Entre Ríos it is expected that there will be one bid for each of the sections, with values ranging between US\$1.4 and US\$3.8 million. For the Fray Bentos-Puerto Unzué International Bridge there will be a single bid.

### 4. Consultants

- 3.46 Execution of the works relating to the national highway and provincial road projects would be supervised through local firms of consultant engineers hired by the DNV to guarantee that all the building procedures accord with the plans, specifications and documents of the contract and to assure that the works are of good quality. COMPAU would hire a firm of engineering consultants through an international competition to handle technical direction and supervision of the works relating to the Fray Bentos-Puerto Unzué International Bridge.
- 3.47 In general, the engineering consultants should be hired by the following procedures:
- a. The DNV and, as appropriate, COMPAU would submit to the Bank for the hiring of the consultants: 1) the procedure by which the firms were to be selected; 2) the terms of reference, describing the scope of the work to be done by the consultants, 3) the list of firms or consortia that would be invited to present proposals.
  - b. When the Bank had given its approval to these three items, the DNV and COMPAU would solicit proposals without price quotations from at least three of the firms approved by the Bank. They would also select the proposals best suited to the specific needs of the respective projects and submit to the Bank for approval the contracts negotiated with the proposing firms. The contracts would be required to contain a clause permitting direct communication between the Bank and the consulting firms on all matters relating to execution of the projects.
- 3.48 In the case of the national highway projects, the scope of the work of the engineering consultants hired by the DNV would include revision of the engineering plans for these works; revision of the bidding documents; analysis of the bids received and recommendations on awarding of the construction contracts, and proper supervision of the works

construction. In the case of the provincial roads project, the consultants would draw up the engineering plans and bidding documents for these works, analyze the proposals received and give an opinion on award of the construction contracts, and supervise works construction. The engineering consultants would assume technical responsibility for the designs and for supervising execution of the works; they would also assign the necessary key personnel, who would be assisted by auxiliary staff designated by the DNV. The engineering consultants would report directly to the DNV on all matters relating to the progress of the projects, with copies of this correspondence to the IDB.

- 3.49 In the case of the Fray Bentos-Puerto Unzué Bridge, for which the final design is now ready, the engineering consultants to be hired by COMPAU would prepare the bidding documents, analyze the bids received, recommend award of the building contracts and provide adequate supervision of the construction of the works. The engineering consultants would assume technical responsibility for designs and be responsible for the supervision of works execution. In addition, they would assign the key personnel needed, who would be assisted by auxiliary staff designated by COMPAU. The engineering consultants would report directly to COMPAU on the progress of the project and send copies of this correspondence to the IDB.
- 3.50 As mentioned in paragraph 2.78, COMPAU would hire a firm of independent public accountants to ensure its proper administrative operation during the phase of construction of the works and afterwards when the bridge is in service. This accounting firm would perform the following services:<sup>1/</sup>
- a. Make a study of the agency's organization in the area of financial administration in order to establish a structure and rules of operation that will meet the agency's future operational requirements, with due regard for the need of an appropriate separation of functions; delimit powers and responsibilities, establish chains of command and determine the quantitative and qualitative composition of the staff.
  - b. Develop administrative, financial and accounting processes, bearing in mind, among other factors, the juridical status of the agency as a supranational entity, the system of authorizations required, the preliminary forms and records to be designed, the internal control of reports and communication which also must be established between COMPAU and the Governments of Argentina and Uruguay, and all other internal systems that may be needed to maintain appropriate control of the administration, accounting, budget and toll receipts.

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<sup>1/</sup> The cost of this work is estimated at the equivalent of US\$30,000, which would be financed with resources from the proposed IDB loan to Uruguay.



- c. Set up an internal audit unit suited to the type of operations that COMPAU would engage in;
- d. Determine the financial and/or statistical information needed at the different levels to optimize the decisions made, which would be used as tools of planning and control.

5. Tolls

- 3.51 COMPAU would charge tolls for the use of the Fray Bentos-Puerto Unzué Bridge. The toll receipts would be used:
- a. To cover the costs of operating and maintaining the bridge.
  - b. To build up a reserve sufficient to pay for operation of the bridge for three months, a sum estimated at the equivalent of US\$15,000.
  - c. To make payments of such surpluses as remain from the toll receipts to the Governments of Argentina and Uruguay in the proportion in which each contributed to execution of the project.

6. Maintenance

- 3.52 Maintenance of the national highways is the responsibility of the Dirección Nacional de Vialidad, which does this work through its Dirección General de Conservación and the regional districts. The provincial roads are maintained by the provincial Direcciones de Vialidad. The Dirección Nacional de Vialidad would undertake properly to maintain, either itself or through the provincial Direcciones de Vialidad of jurisdiction, all roads financed with the resources of the loans.
- 3.53 In this connection it may be mentioned that in the last three years the DNV has allocated sizable sums from its own resources to highway maintenance, as indicated by the following data:

(Equivalent in US\$ thousands)

	<u>1967</u>	<u>1968</u>	<u>1969</u>
Maintenance	33,818	36,832	39,865

- 3.54 The average cost of maintenance per km/year of the highway network in Argentina was as follows during 1967-69:

(In US\$ equivalents)

	<u>1967</u>	<u>1968</u>	<u>1969</u>
Average cost km/year	789	860	931

- 3.55 The average cost of maintenance per km/year of this network by type of surface has been estimated at the following figures for 1970:

SURFACE	LENGTH	AVERAGE COST
	Maintained in km.	Km/year (US\$) <sup>1/</sup>
A - First-class surface	5,705	1,300
B - Second-class surface	11,247	1,125
C - Improved surface	8,120	938
D - Dirt road	15,526	700
E - Trail	2,238	566
TOTAL	42,836	929 <sup>2/</sup>

- 3.56 It is observed that the DNV has sustained a highly satisfactory level of investment in maintenance of the road network, and the average cost of maintenance per km/year is considered acceptable.
- 3.57 To ensure adequate maintenance of the roads to be financed with the resources of the loans, the DNV would submit to the Bank for approval, at least three months prior to the start of each fiscal year and for a period of 10 years after completion of the works, an annual plan for the maintenance of those works. This plan would also have to evaluate the conditions of the roads (by a method to be agreed upon with the Bank) and indicate the amount of funds available in the maintenance budget for the current year and the amount provided in the budget of the year for which the plan is submitted.
- 3.58 The annual cost of maintenance per km. of the roads that constitute the national highways project has been estimated at US\$1,120, and that of the roads under the provincial roads project at US\$800. The DNV would undertake to allocate on its annual budgets the amounts needed for proper maintenance of the roads covered by the program (see conclusions and recommendations).
- 3.59 The maintenance and administration of the bridge would be the responsibility of COMPAU, under contracts it would enter into with the Dirección Nacional de Vialidad or the Ministry of Public Works of Uruguay, pursuant to procedures acceptable to the Bank. Also, COMPAU would have to submit to the Bank the draft of the contract that it would enter into with the agency responsible for maintenance. The toll proceeds would be used first to cover the cost of maintaining and administering the bridge and its accessory works. In addition, for purposes of assuring adequate maintenance of the bridge, COMPAU would submit to the Bank for approval, at least three months prior

<sup>1/</sup> Exchange rate - US\$1 = 4 pesos.  
<sup>2/</sup> Weighted average.

to the start of each fiscal year and for a period of 10 years after completion of the works, an annual maintenance plan. The maintenance plan should also state the amount of funds available in the maintenance budget for the current year and the amount of those to be allocated in the budget of the year for which the plan is submitted. The annual cost of maintaining the bridge is estimated at US\$175,000 in the first year of operation, which figure is expected to rise about 3% per annum in subsequent years.

#### 7. IDB Inspection and Supervision

- 3.60 Two project specialists would be hired to supervise execution of the program for account of the IDB. One of them would be a highway engineer experienced in the construction of works similar to the national highway and provincial roads and the other an engineer with bridge-building experience.

#### 8. External Audit

- 3.61 With respect to external auditing, the Dirección Nacional de Vialidad shall present to the IDB, within 120 days of the close of each fiscal year, its financial statements and those related to the National Highways and Provincial Roads Projects, audited by the Contaduría General de la Nación. For COMPAU it has been established that it shall present to the IDB within 120 days of the close of each fiscal year, its financial statements audited by a firm of independent public accountants (see Conclusions and Recommendations).

#### IV. JUSTIFICATION

##### A. Technical, Financial and Administrative Feasibility

- 4.01 As indicated in the foregoing chapters, the Dirección Nacional de Vialidad is adequately organized and technically capable of performing its function of building and maintaining the national highway network. On the whole, it has enough technical, administrative and field personnel to do the work relating to the studies, preparation of bidding documents, award of contracts and construction, maintenance and supervision of works. However, because of the magnitude of the works to be executed, and in keeping with the policy pursued by the DNV, it is deemed advisable to hire specialized consultants to review designs and bidding documents, participate in the award of contracts subject to public bidding and supervise execution of the works in order to ensure satisfactory progress of the projects. Moreover, the Direcciones Provinciales of Entre Ríos and Corrientes Provinces are able to collaborate with the DNV in supervising the provincial roads project and adequately maintaining the roads to be built.
- 4.02 As previously indicated (see paragraph 2.75), COMPAU's work to date has consisted of formulation of the project. This is the kind of work to which its very simple organic structure is suited. If it is to enter upon the new stage of its responsibilities, it is considered that the agency must be endowed with the technical capability and administrative flexibility to guarantee that the project is executed satisfactorily and operated properly after completion. To this end, a series of measures has been provided for (see paragraphs 2.78 and 3.51) which are set forth in the chapter on conclusions and recommendations of the present document.
- 4.03 The projects that make up the program are regarded as technically feasible and the general financing plan as suitable. The cost estimates developed by the consultants have been carefully examined and are considered satisfactory. In addition, each project has been assigned a sum proportionate to the net construction cost<sup>1/</sup> to cover contingencies and a percentage for possible cost increases<sup>2/</sup> deriving from possible internal and external price inflation during the execution years.
- 4.04 From the projections of sources and uses of funds given in Appendix F, it is concluded that the DNV will have sufficient resources to make the local contributions required for execution of the program and to meet the payments of principal and interest due on the IDB loans.

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<sup>1/</sup> For the national highways project, the figure taken was 5% of net construction cost. This percentage was 10 for the international bridge project and 20 for the provincial roads project.

<sup>2/</sup> The proportion used to compute contingencies for cost increases was 3% per annum on the cost estimates stated in dollars.

- 4.05 As to toll collections from users of the bridge, COMPAU will take, through the executing agency, the necessary measures to ensure sufficient funds for operation and maintenance of the works.
- 4.06 The execution mechanism is regarded as satisfactory for implementation of the three projects.

B. Economic Justification of the Program

1. Zone of Influence

- 4.07 Though the program covers roads and highways located in Entre Ríos and Corrientes Provinces, the entire Mesopotamia region may be regarded as its zone of influence, given the nature of the traffic between that region and Greater Buenos Aires. For purposes of the economic evaluation, the Mesopotamia region consists of the Provinces of Entre Ríos, Corrientes and Misiones and is bounded to the east by the Uruguay and to the west by the Paraná River.
- 4.08 Mesopotamia covers 7% of the area of Argentina and contains about 8% of the national population. The climate is basically subtropical and the economy is based mainly on farming. Industry consists, for the most part, of the processing of agricultural products and contributes about 11% of the gross regional product, against 35% from national industry to the GNP. The dynamic industries of the country, such as the automotive and chemical factories and the metal mills, are not located in Mesopotamia. The region does offer great opportunities for the expansion of plant and animal processing industries, however. The major agricultural activity in Entre Ríos and Corrientes is the raising of livestock, chiefly sheep and cattle, though ranching methods are outdated. Part of Entre Ríos Province is considered as ecologically continuous with the moist pampa, and significant quantities of wheat, maize and sorghum are grown there. Citrus fruit is an important crop in all three provinces, while Corrientes and Entre Ríos produce most of the rice consumed in Argentina. The principal crops of Misiones are wood, citrus fruit, tea and tung.
- 4.09 During 1958-66, Mesopotamia contributed 4% of the gross domestic product of Argentina. The Mesopotamia per capita income is less than half the national average. During the aforementioned period, the gross domestic product of Argentina grew at a cumulative annual rate of 2.3% while that of Mesopotamia remained at a standstill, implying a decline in per capita income. Since 1964, the Argentine national income has been visibly accelerating while the Mesopotamia regional income, though increasing slightly, has lagged behind the average national recovery. During 1958-66, the net contribution of each province to the Mesopotamia regional product was as follows: Entre Ríos 54%, Corrientes 27% and Misiones 19%. The isolation of Mesopotamia from the rest of Argentina because of the lack of bridges and tunnels across the rivers separating it from the other provinces has undoubtedly helped to keep the economic performance of the region at a low

level. Construction of the Chaco-Corrientes Bridge (already started), the Paraná-Santa Fé Tunnel (already completed) and the Zárate-Brazo Largo complex (to be executed by the DNV) will eliminate these obstacles to development. In addition, the projects for construction of the Paysandú-Colón and Fray Bentos-Puerto Unzué Bridges (the latter under the present program) are now being processed. Since most of Mesopotamia's regional trade is with Buenos Aires, the construction of arterial highways of modern design to connect these two regions of the country (Routes 12 and 14) and of paved roads within Mesopotamia will also stimulate the region's economy by permitting more efficient use of its production capabilities.

- 4.10 In the case of the Fray Bentos-Puerto Unzué Bridge project, the zone of influence of the project would encompass the Brazilian States of Paraná, Santa Catarina and Rio Grande do Sul, all of Uruguay and, in Argentina itself, Entre Ríos Province, southern Santa Fé Province and northeastern Buenos Aires Province. Other areas which, though more distant, would derive certain economic benefits from the construction of this bridge are the vast expanse of Brazil north of the three aforementioned states and the provinces and regions of Argentina south of parallel 31°.

## 2. Profitability of Investments

### a. National highways project

- 4.11 The sections of national highway to be constructed would not only improve road transportation in Entre Ríos and Corrientes Provinces but also directly benefit users from other provinces and adjacent countries, as well as bringing indirect induced benefits to nonusers. The studies conducted on profitability of the investments in a representative sample of this project indicate that its direct economic benefits deriving from economies in the cost of vehicle operation and highway maintenance would make the project as a whole attractively profitable. The profitability of the different highway sections is as follows:<sup>1/</sup>

(US\$ thousands)

Section	Km.	Current value of direct benefits over 25-year period (i = 10% p.a.)	Current value of direct costs (10% p.a.)	B/C	Internal rate of return
Brazo Largo-Ceibas	45.5	22,155	12,998	1.70	15.5%
Ceibas-Guaaleguay	63.9	17,994	7,560	2.38	19.8%
Ceibas-Guaaleguaychú	73.4	10,181	6,854	1.49	14.0%

<sup>1/</sup> The benefits used in this justification were computed by the consultants on the assumption that the Zárate-Brazo Largo Bridge would be built.

- 4.12 It may be pointed out that, besides the direct benefits mentioned in the foregoing paragraph, the project would entail a series of additional benefits, such as the possibility of lower crop prices afforded by faster access to markets, reduced loss of perishable commodities, a contribution to narrowing gaps in the income and employment of area population, etc., all of which would have favorable implications for economic and social development of the region.

b. Fray Bentos-Puerto Unzué Bridge project

- 4.13 The bridge as designed would constitute a facility for regional integration of the Argentine Northeast that would lead to formation of an axis for the interconnection of national highways and for international linkage with Uruguay and Brazil. The direct and indirect economic benefits have been estimated on the basis of the savings in time and cost of vehicle operation to be gained in passenger and freight traffic across the bridge (direct benefits) and of the net benefits to the economy of Uruguay resulting from tourist spending induced by the bridge (indirect benefits).<sup>1/</sup> The internal rate of return has been estimated at 11.7%. It should be stressed that the economic benefits of the Fray Bentos-Puerto Unzué Bridge were estimated without regard for the benefits that would be generated by Argentine-Brazilian traffic, which were assigned to the Paysandú-Colón Bridge.

c. Provincial roads project

- 4.14 The profitability study of investments under this project analyzed the investments to be made in the roads located in Entre Ríos Province, which account for 67% of the total project cost. The remaining 33% consists of four roads in Corrientes Province whose economic feasibility studies would be presented by the DNV in due course. The profitability of the sections studied, deriving from savings in the cost of vehicle operation and road maintenance, is acceptable on the whole and breaks down as follows:

Section	Km.	Internal rate of return
P.R. 13 - Nogoyá - junction P.R. 11	86	24.0%
P.R. 15 - Rosario de Tala - junction N.R. 18	63	24.2%
P.R. 19 - Lucas González - junction P.R. 15	49	20.2%
P.R. 16 - Gualaguay - Gualaguaychú	80	33.0%
P.R. 20 - Gualaguaychú - Basavilbaso	95	20.0%

<sup>1/</sup> In computing these indirect benefits, account was taken of the additional investments needed in hotels and other facilities to serve the induced inflow of tourists.

- 4.15 As previously mentioned, the DNV would send to the Bank the economic feasibility studies on the roads located in Corrientes Province and on the section of Provincial Route 19 between Urdinarrain and the junction with Provincial Route 15 located in Entre Ríos Province. The chapter on conclusions and recommendations contains a clause making disbursements for each segment contingent upon presentation of the respective technical and economic feasibility studies. Such studies should show an internal rate of return of no less than 10%.

### 3. Program Effect on Land Values

- 4.16 The proposed program would have the effect of improving land values in the areas along the roads or within their zones of influence. A tax on the added value of the lands could prove to be an important source of financing for road construction and maintenance.
- 4.17 Both Entre Ríos and Corrientes have provincial laws providing for taxes on the added value of lands adjacent to new roads. However, owing to the low average income level in the area, it has not been considered desirable to enforce these laws as originally enacted. Technical committees whose members include representatives of the provincial road, cadastral and revenue administrations have been set up in both provinces to consider the amendments to be made to the laws to permit their enforcement in the near future.

### 4. The Program, Internal Regional Integration and Multinational Integration

- 4.18 Construction of the works called for under the national highways and provincial roads projects would afford greater integration of the road transportation system in the area of influence of the program. Interlinking Mesopotamia with the Greater Buenos Aires area would accelerate the sluggish pace of economic development in the former and help narrow the gap between the two regions.
- 4.19 The Fray Bentos-Puerto Unzué International Bridge would make it possible to integrate the transportation systems of Argentina, Uruguay and Brazil and entail, in addition to the direct and indirect economic benefits already computed, a series of other benefits inherent in multinational integration projects, such as social, economic and political progress.

### 5. Utilization of FSO Resources

- 4.20 The resources from the Fund for Special Operations would be used solely to finance provincial roads in the least developed part of northeastern Argentina. The use of these resources is justified because they would be earmarked for an infrastructure project to be executed in one of the relatively less developed regions of Argentina.



## V. CONCLUSIONS AND RECOMMENDATIONS

5.01 The analysis made in the preceeding chapters leads to the conclusion that the projects for the highway program for the Mesopotamia region and the interconnection with Uruguay are feasible from the technical, economic, financial and legal points of view. It is therefore recommended that the Argentine Nation be granted three loans for a total up to the equivalent of US\$33,500,000, as follows: one for up to the equivalent of US\$8,000,000 from the ordinary capital resources of the Bank, for the Fray Bentos-Puerto Unzué International Bridge project; another for up to the equivalent of US\$8,500,000, also from the ordinary capital resources, for the National Routes project; and the third, for up to the equivalent of US\$17,000,000, from the Fund for Special Operations, for the Provincial Routes project. These loans shall be subject to the provisions to be established in the respective resolutions and to the following conditions to be included in the corresponding loan contracts and fulfilled to the satisfaction of the Bank.

### A. Conditions applicable to the loan for the National Routes project

1. Before proceeding to the various calls for public bids, the Dirección Nacional de Vialidad shall submit for the Bank's approval the final engineering plans and the corresponding set of bidding documents.
2. Commencement of disbursement for the construction of the national route starting from the connection with the National Route 14 and extending to point A<sub>1</sub> of the Fray Bentos-Puerto Unzué bridge shall be subject to the signing of the loan contracts with Argentina and Uruguay for the construction of said bridge, including in the case of the last mentioned country, the corresponding contract ratification by the National Congress.
3. The debtor shall undertake to maintain the highways, through the Dirección Nacional de Vialidad, during the period of at least 10 years from the completion of the works financed with the resources of the loan, in accordance with standards acceptable to the Bank and the provisions set forth in Appendix A.

### B. Conditions applicable to the loan for the Fray Bentos-Puerto Unzué International Bridge project

1. Prior to the first disbursement from the loan, COMPAU shall demonstrate to the Bank:
  - (a) That the appropriate amounts for the national contribution to the construction of the International Bridge have been included in the budgets of the debtor and of the Republic of Uruguay for 1971 and that these amounts shall be available for disbursement in due time.

## V. CONCLUSIONS AND RECOMMENDATIONS

5.01 The analysis made in the preceeding chapters leads to the conclusion that the projects for the highway program for the Mesopotamia region and the interconnection with Uruguay are feasible from the technical, economic, financial and legal points of view. It is therefore recommended that the Argentine Nation be granted three loans for a total up to the equivalent of US\$33,500,000, as follows: one for up to the equivalent of US\$8,000,000 from the ordinary capital resources of the Bank, for the Fray Bentos-Puerto Unzué International Bridge project; another for up to the equivalent of US\$8,500,000, also from the ordinary capital resources, for the National Routes project; and the third, for up to the equivalent of US\$17,000,000, from the Fund for Special Operations, for the Provincial Routes project. These loans shall be subject to the provisions to be established in the respective resolutions and to the following conditions to be included in the corresponding loan contracts and fulfilled to the satisfaction of the Bank.

### A. Conditions applicable to the loan for the National Routes project

1. Before proceeding to the various calls for public bids, the Dirección Nacional de Vialidad shall submit for the Bank's approval the final engineering plans and the corresponding set of bidding documents.
2. The debtor shall undertake to maintain the highways, through the Dirección Nacional de Vialidad, during the period of at least 10 years from the completion of the works financed with the resources of the loan, in accordance with standards acceptable to the Bank and the provisions set forth in Appendix A. .

### B. Conditions applicable to the loan for the Fray Bentos-Puerto Unzué International Bridge project

1. Prior to the first disbursement from the loan, COMPAU shall demonstrate to the Bank:
  - (a) That the appropriate amounts for the national contribution to the construction of the International Bridge have been included in the budgets of the debtor and of the Republic of Uruguay for 1971 and that these amounts shall be available for disbursement in due time.
  - (b) That it has contracted, on terms and conditions satisfactory to the Bank, for the services of (i) an official to serve as Executive Director of the project,

C. Conditions applicable to the loan for the Provincial Routes project

1. Prior to any disbursement for any of the provincial routes indicated in Appendix A, the Dirección Nacional de Vialidad shall submit to the Bank the final studies demonstrating the technical and economic feasibility of such route and show, in each case, an internal rate of return of not less than 10%.
  2. Prior to any call for bids, the Dirección Nacional de Vialidad shall submit the final engineering plans and corresponding set of bidding documents to the Bank for approval.
  3. The debtor shall undertake to maintain the highways, through the Dirección Nacional de Vialidad, during the period of at least 10 years from the completion of the works financed with the resources of the loan, in accordance with standards acceptable to the Bank and the provisions set forth in Appendix A.
  4. Within 18 months from the date of the loan contract the debtor shall submit to the Bank a report on the measures undertaken or to be undertaken to put into effect the laws related to the tax on the increase in value of the lands which would be benefitted by the roads in the Provinces of Entre Ríos and Corrientes.
- 5.02 The manner in which the financial statements relating to COMPAU and to the Dirección Nacional de Vialidad shall be audited shall be established in the respective loan contracts, taking into account the provisions of paragraph 3.61 of this document.
- 5.03 For the respective Inspection and Supervision Fund of the Bank, a total amount of US\$335,000 shall be allocated from the resources of the three loans divided as follows: (a) US\$85,000 from the loan from the ordinary capital resources of the Bank for the National Routes project; (b) US\$80,000 from the loan from the ordinary capital resources of the Bank for the Fray Bentos-Puerto Unzué International Bridge project; and (c) US\$170,000 from the loan from the Fund for Special Operations for the Provincial Routes project.
- 5.04 A total equivalent to US\$5,440,000 in currencies of non-member countries to which Resolution DE-49/62 as amended, is applicable, shall be utilized in the loans to be granted from the ordinary capital resources of the Bank, as follows: (a) the equivalent of US\$2,900,000 from the loan for the National Routes project; and (b) the equivalent of US\$2,540,000 from the loan for the Fray Bentos-Puerto Unzué International Bridge project.
- 5.05 The contents of Appendix A of this document shall be incorporated in substance in an annex of the loan contracts.
- 5.06 The United States dollars to be utilized in the loan from the Fund for Special Operations shall be drawn from the resources contributed to that Fund by virtue of the increases approved by Resolutions AG-2/65 and/or AG-10/67.

DESCRIPCION DEL PROGRAMA

(ANEXO "B" DEL CONTRATO DE PRESTAMO)

A) DEL PROGRAMA

El Programa se divide en tres Proyectos:

- 1) Proyecto de Rutas Nacionales: Los trabajos contemplados bajo este proyecto comprenden la construcción de las obras de terracería, drenajes y pavimentación con concreto asfáltico de 215 Km. de rutas nacionales, cuyos tramos se mencionan a continuación:

(a) Rutas Nacionales No. 12

Brazo Largo a Ceibas	45,5 Km
Ceibas a Médanos	26,2 Km
Médanos a Gualeguay	37,7 Km

(b) Ruta Nacional No. 14

Ceibas a Sauce	43,0 Km
Sauce a Empalme RP 20	30,4 Km

(c) Ruta Nacional S/N

Empalme RN 14 al Puente Internacional Fray Bentos - Puerto Unzué	32,0 Km
---	---------

T o t a l : 214,8 Km

- 2) Proyecto de Puente Internacional Fray Bentos - Puerto Unzué:

Este proyecto consiste en la construcción de un puente sobre el Río Uruguay y sus viaductos de acceso, entre las localidades de Puerto Unzué, Provincia de Entre Ríos (Argentina) y Fray Bentos, Departamento de Río Negro (Uruguay), con una longitud de aproximadamente 5,4 Km. Los límites de la obra son los puntos identificados en el terreno mediante los mojones A<sub>1</sub> (lado argentino, Km. 0.4555) y U<sub>1</sub> (lado uruguayo, Km. 5,821), que distan entre sí de 5,36688 Km. El ancho de calzada es de 8,50 m. para permitir el tránsito de los vehículos en las dos sendas y además tiene dos veredas de 1,50 m. cada una para peatones.

La obra está dividida en los siguientes tramos:

- (a) Un vano principal sobre el canal navegable del río Uruguay con una luz de 220 metros entre apoyos y una altura libre de 36 m. referida al cero de Fray Bentos;
- (b) Dos vanos contiguos al principal con luz de 145 m. entre apoyos;
- (c) 24 vanos secundarios, de 70 m. de luz entre pilas, correspondiendo 17 del lado argentino y 7 del lado uruguayo;
- (d) Dos vanos de transición, uno a cada lado, de 55 m. de luz entre apoyos;
- (e) Viaducto del lado argentino constituido por 26 vanos de 41,05 m. de luz entre apoyos y un vano final de 40.52 m. de luz entre pila y estribo;
- (f) Obra de acceso (terraplén) entre A<sub>1</sub> 0,455 Km. y 2,07765 Km del lado argentino y U<sub>1</sub> 5.486 Km. y 5.82188 Km. del lado uruguayo.

3) Proyecto de Rutas Provinciales:

Este proyecto comprende la construcción, mejoramiento y reconstrucción de aproximadamente 610 Km. de rutas provinciales que servirán de alimentadoras al sistema de rutas nacionales en las provincias de Entre Ríos y Corrientes, especialmente aquellas más directamente vinculadas al proyecto de rutas nacionales. Los estudios de factibilidad de las rutas provinciales de Entre Ríos se encuentran terminados con excepción del tramo entre Urdinarrain y la ruta provincial 15. Los estudios de factibilidad económica de las rutas localizadas en la Provincia de Corrientes están por completarse. En consecuencia las rutas de la Provincia de Corrientes actualmente indicadas para componer el proyecto así como la ruta mencionada de Entre Ríos son tentativas. Cualquier sustitución de rutas que integran el proyecto quedará sujeto a la presentación de los estudios que comprueben la factibilidad técnica y económica de las mismas. Actualmente se encuentran seleccionados los siguientes tramos:

Provincia de Entre RíosObras básicas y pavimentación

RP 13 Nogoyá a Empalme RP 11	86,0 Km
RP 15 Rosario de Tala a Empalme RN 18	63,0 "
RP 19 Lucas González a Empalme RP 15	49,0 "
RP 19 Empalme RP 15 a Urdinarraín	35,0 "
Subtotal	233,0 Km

Reconstrucción

RP 16 Gualaguay a Gualaguaychú	80,0 Km
RP 20 Gualaguaychú a Basavilbaso	95,0 "
Subtotal	175,0 Km

Total en la Provincia 408,0 Km

Provincia de CorrientesObras básicas y pavimentación

RP 6 RN 12 a RP 17	87,0 Km
RP 41 Empalme RN 12 - Empalme RP 37	37,0 "
RP 37 RP 41 a Empalme RP 14	51,0 "
RP 25 Empalme RN 122 a Empalme RN 127	27,0 "

Total en la Provincia 202,0 Km

Total General de Obras 610,0 Km

B) COSTO Y FINANCIAMIENTO DEL PROGRAMA

El costo total del programa se estima en el equivalente de  
US\$83.700.000, los cuales serán distribuidos en la siguiente forma:

**COSTO TOTAL Y PLAN DE FINANCIAMIENTO DEL PROGRAMA 1/**

(En miles de US\$)

R U B R O S	P R E S T A M O S D E L B I D							A P O R T E L O C A L		
	M O N E D A S D E U S O						TOTAL	GASTOS EN MONEDA LOCAL	GASTOS EN DIVISAS	TOTAL
	E N D I V I S A S			PARA GASTOS LOCALES	TOTAL	EN MONEDA LOCAL				
	PARA GASTOS EN DIVISAS									
	DIRECTOS	INDIRECTOS	TOTAL							
Proyecto Rutas Nacionales (OC)	85	5.615	5.700	1.550	7.250	1.250	8.500	30.868	1.532	32.400
Construcción (215 Kms.)	-	4.883	4.883	1.172	6.055	945	7.000	25.608	-	25.608
Imprevistos	-	732	732	378	1.110	305	1.415	3.065	-	3.065
Supervisión y Administración	-	-	-	-	-	-	-	1.660	-	1.660
Estudios de Factibilidad	-	-	-	-	-	-	-	335	-	335
Otros Gastos	85	-	85	-	85	-	85	200	1.532	1.732
Intereses	-	-	-	-	-	-	-	170	1.315	1.485
Comisión de Compromiso	-	-	-	-	-	-	-	30	217	247
Inspección y Vigilancia BID	95	-	85	-	85	-	85	-	-	-
Proyecto Puente Fray Bentos-Puerto Unzué (OC) 2/	2.238	2.364	4.602	1.748	6.350	1.650	8.000	3.350	1.740	5.100
Construcción (71,7% de US\$12.145.425)	1.472	1.969	3.441	1.457	4.898	1.376	6.274	2.434	-	2.434
Estudios de Factibilidad e Ingeniería	-	-	-	-	-	-	-	-	-	-
(50% de US\$680.000)	-	-	-	-	-	-	-	-	340	340
Consultores para Supervisión Construcción	-	-	-	-	-	-	-	-	-	-
Puente (71,7% de US\$600.000)	430	-	430	-	430	-	430	-	-	-
Gastos de Administración COMPAU durante Cons-	-	-	-	-	-	-	-	215	-	215
trucción (71,7% de US\$300.000)	-	-	-	-	-	-	-	427	-	427
Imprevistos	256	395	651	291	942	274	1.216	427	-	427
Otros Gastos	80	-	80	-	80	-	80	284	1.400	1.684
Intereses	-	-	-	-	-	-	-	244	1.204	1.448
Comisión de Compromiso	-	-	-	-	-	-	-	40	196	236
Inspección y Vigilancia BID	80	-	80	-	80	-	80	-	-	-
SUBTOTAL (I + II)	2.323	7.979	10.302	3.298	13.500	2.900	16.500	34.228	3.272	37.500
Proyecto de Rutas Provinciales (FOE)	170	2.854	3.024	2.476	5.500	11.500	17.000	12.200	500	12.700
Construcción (600 Kms.)	-	2.267	2.267	1.962	4.229	9.114	13.343	7.267	-	7.267
Provincia Entre Ríos (398 Kms.)	-	1.550	1.500	1.298	2.798	6.030	8.828	4.811	-	4.811
Provincia Corrientes (202 Kms.)	-	767	767	664	1.431	3.084	4.515	2.456	-	2.456
Imprevistos	-	587	587	514	1.101	2.386	3.487	1.827	-	1.827
Supervisión y Administración	-	-	-	-	-	-	-	1.195	-	1.195
Estudios de Factibilidad	-	-	-	-	-	-	-	389	400	789
Otros Gastos	170	-	170	-	170	-	170	1.522	100	1.622
Intereses	-	-	-	-	-	-	-	1.382	-	1.382
Comisión de Compromiso	-	-	-	-	-	-	-	140	100	240
Inspección y Vigilancia BID	170	-	170	-	170	-	170	-	-	-
TOTAL DEL PROGRAMA	2.493	10.833	13.326	5.774	19.000	14.400	33.500	46.428	3.772	50.200

Algunas diferencias entre estas cifras y las del informe técnico que se deben a ajustes y a la composición de las monedas de pago de los intereses de la parte Argentina.

El financiamiento del programa se realizaría conforme al siguiente esquema:

FUENTE Y USO DE MONEDAS  
(En miles de US\$ equivalentes)

PROGRAMA VIAL DE LA MESOPOTAMIA E INTERCONEXION CON EL URUGUAY	MONEDAS DE ORIGEN		MONEDAS DE USO		TOTAL	%
	DIVISAS	LOCAL	DIVISAS	LOCAL		
- Proyecto Rutas Nacionales						
Préstamo del BID (CO)	7.250	1.250	5.700	2.800	8.500	20,8
Aporte Local	-	32.400	1.532	30.868	32.400	79,2
Subtotal	7.250	33.650	7.232	33.668	40.900	100,0
- Proyecto Puente Fray Bentos-Puerto Unzué <sup>1/</sup>						
Préstamo del BID (CO)	6.350	1.650	4.602	3.398	8.000	61,0
Aporte Local	-	5.100	1.740	3.360	5.100	39,0
Subtotal	6.350	6.750	6.342	6.758	13.100	100,0
Subtotal (I + II)						
Préstamos del BID (CO)	13.600	2.900	10.302	6.198	16.500	30,5
Aporte Local	-	37.500	3.272	34.228	37.500	69,5
TOTAL	13.600	40.400	13.574	40.426	54.000	100,0
- Proyecto Rutas Provinciales						
Préstamo del BID (FOE)	5.500	11.500	3.024	13.976	17.000	57,2
Aporte Local	-	12.700	500	12.200	12.700	42,8
TOTAL	5.500	24.200	3.524	26.176	29.700	100,0
TOTAL DEL PROGRAMA	19.100	64.600	17.098	66.602	83.700	100,0
Préstamos del BID	19.100	14.400	13.326	20.174	33.500	40,0
CO	13.600	2.900	10.302	6.198	16.500	19,7
FOE	5.500	11.500	3.024	13.976	17.000	20,3
Aporte Local	-	50.200	3.772	46.428	50.200	60,0
Proyecto I	-	32.400	1.532	30.868	32.400	38,7
Proyecto II	-	5.100	1.740	3.360	5.100	6,1
Proyecto III	-	12.700	500	12.200	12.700	15,2

/ Costo de la parte Argentina.

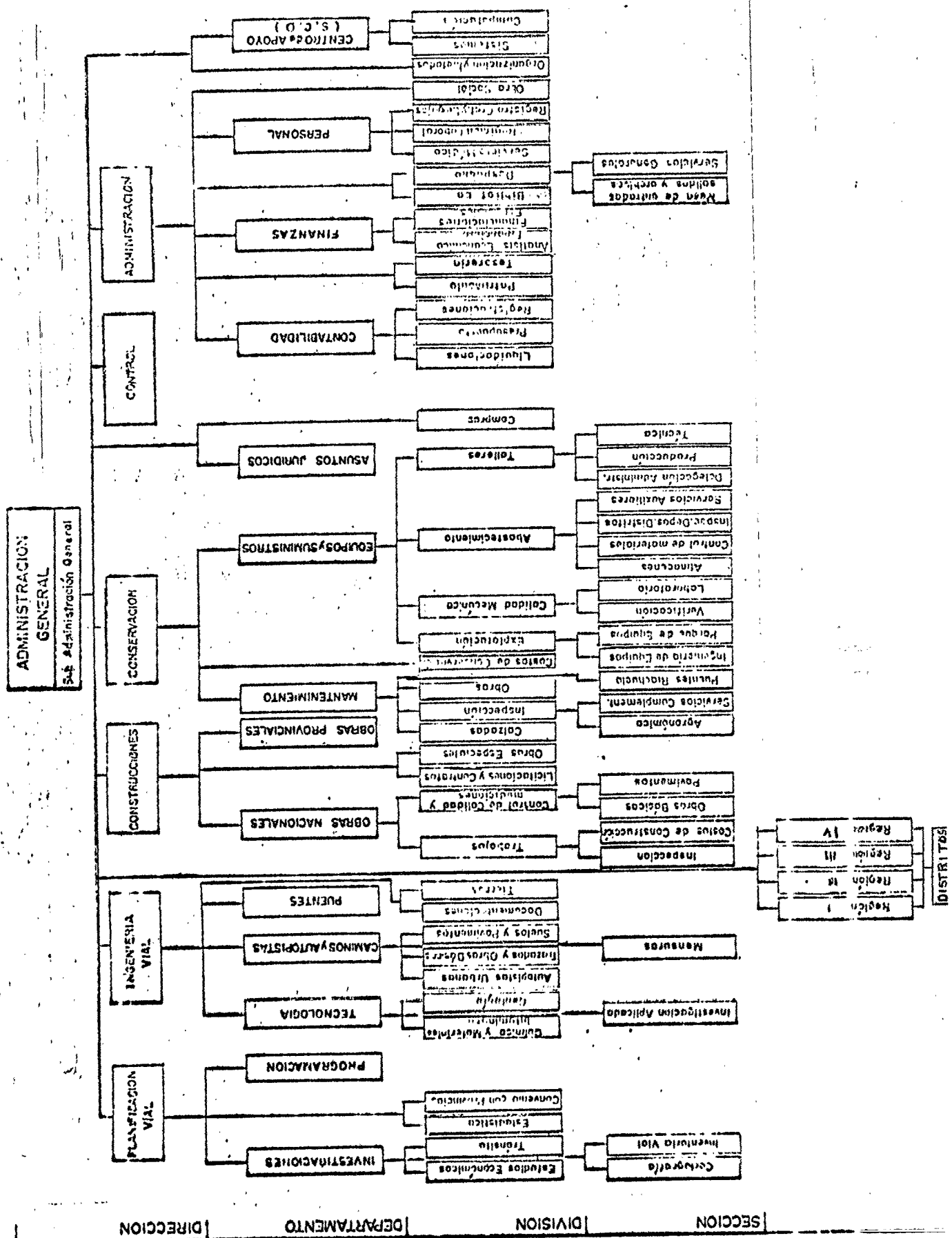


c) MANTENIMIENTO

A los efectos de asegurar un adecuado mantenimiento de la carretera y el puente que se financiaría con los recursos del BID, se seguirán las siguientes normas:

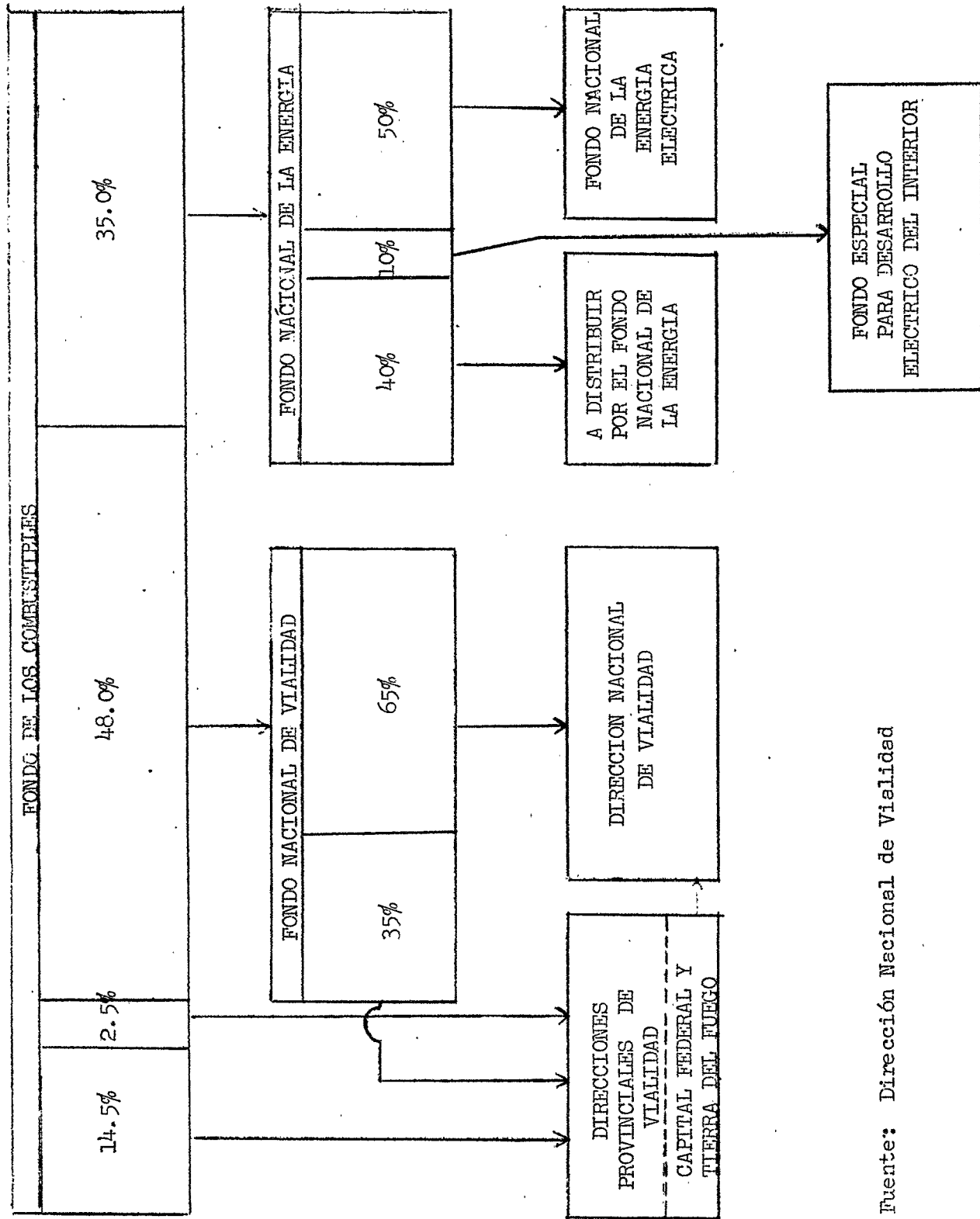
1. El propósito básico del mantenimiento será conservar la carretera y la estructura con todas sus partes componentes sustancialmente en las mismas condiciones en que se encontraban cuando fueron construídos.
2. El plan anual de mantenimiento deberá ser sometido a la aprobación del Banco por lo menos tres meses antes del comienzo de cada año fiscal; e incluirá como mínimo los detalles de la organización responsable del mantenimiento, el personal encargado del mantenimiento, el número, tipo y condición de los equipos destinados a mantenimiento; la localización y tamaño y condiciones de los locales de reparación, almacenamientos y campos de mantenimiento, etc.; el tipo de control que se usará para limitar el tamaño y peso de los vehículos que utilicen cada camino; el número de kilómetros de cada tipo de camino a ser mantenido y la localización de esos caminos, etc. Asimismo, deberá someterse al Banco el proyecto de contrato que se celebrará con el organismo responsable del mantenimiento.
3. El plan de mantenimiento deberá señalar los fondos disponibles en el presupuesto de mantenimiento (con exclusión de las operaciones de mejora) para el año corriente e incluirá la cantidad a ser asignada en el presupuesto para el año para el cual el plan es sometido.
4. El plan incluirá también un informe acerca de las condiciones del mantenimiento, basado en un sistema de evaluación de suficiencia que deberá haber sido previamente sometido y aprobado por el Banco. Este sistema estará estructurado para proporcionar una calificación global de las condiciones de mantenimiento de la carretera, cuya calificación estará basada en una evaluación numérica de los distintos componentes, tales como pavimentos, paseos, cunetas, estructuras de drenaje, puentes, etc.
5. El Banco tendrá el derecho de inspeccionar periódicamente los caminos. Si llegara a determinarse por la inspección o por los informes que el mantenimiento se efectúa por debajo de los standards convenidos, el deudor deberá ejercer la acción necesaria para corregir totalmente las deficiencias

## APPENDICE B



REPUBLICA ARGENTINA  
 DIRECCION NACIONAL DE VIALIDAD  
 DISTRIBUCION DEL GRAVAMEN A LOS COMBUSTIBLES

APENDICE C



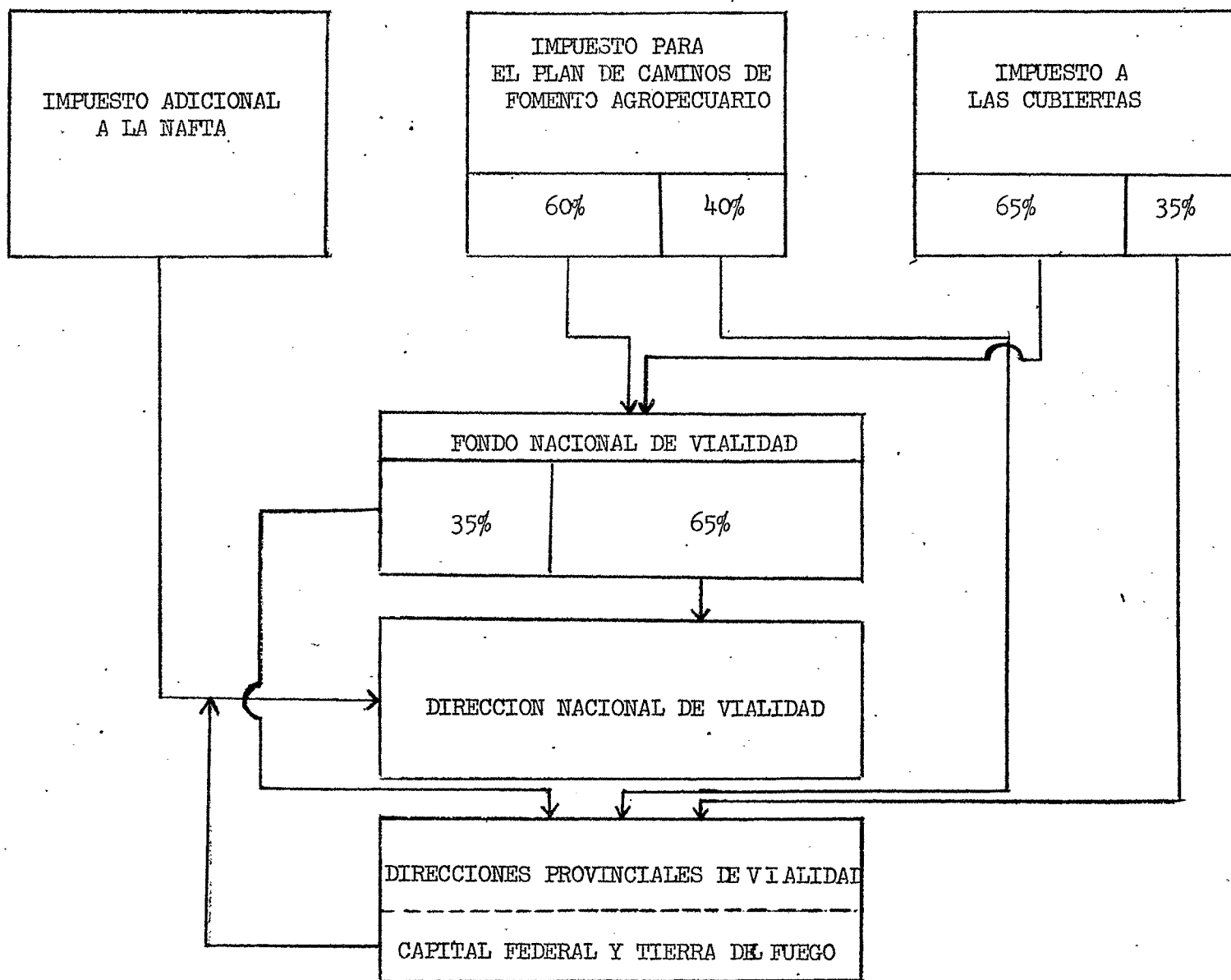
Fuente: Dirección Nacional de Vialidad

REPÚBLICA ARGENTINA

APENDICE D

DIRECCION NACIONAL DE VIALIDAD

DESTINO DE LOS FONDOS RECAUDADOS POR IMPUESTOS



Fuente: Dirección Nacional de Vialidad

REPUBLICA ARGENTINA  
 DIRECCION NACIONAL DE VIALIDAD  
 RECURSOS DE LA DNV Y DE LAS DIRECCIONES PROVINCIALES DE VIALIDAD

APENDICE E

RECURSOS PROPIOS DE VIALIDAD	IMPUESTO A LOS COMBUSTIBLES LEY 16657 ART 1º Y LEY 11597 35% 65%	RECURSOS EXTRAORDINARIOS DE VIALIDAD
	IMPUESTO A LOS LUBRICANTES Dº LEY 505/58 ART. 18 c) 35% 65%	
	IMPUESTO A LAS CUBIERTAS Dº LEY 505/58 ART. 18 d) 35% 65%	
	IMPUESTO A LA COMPRA Y TRANSFER. AUTOMOTORES LEY 11335 ART. 11 y Dº LEY 505/58 ART 18 e) 35% 65%	
	Dº LEY 505/58 Y LEY 16657 ART. 1º c) 11,5% CAPITAL FEDERAL Y TIERRA DEL FUEGO 100%	
	FONDO NACIONAL COMPLEMENTARIO DE VIALIDAD LEY 15274 - IMPUESTO A LAS CUBIERTAS 35% 65%	
	IMPUESTO ESPECIAL A LA NAFTA LEY 18001 ART 1º 100%	
	PLAN DE CAMINOS DE FOMENTO AGRICOLA LEY 15273 y 16450 40% 60%	
	RENTA DE VALORES PUBLICOS Dº LEY 505/58 ART 18 j) 100%	
	VENTA DE ZINNES Dº LEY 505/58 ART. 18 g) 100%	
	VENTA DE SERVICIOS Dº LEY 505/58 ART. 18 g) 100%	
	OTROS SIN CLASIFICAR Dº LEY 505/58 ART. 18 k-l-m) 100%	
	USO DEL CREDITO PRESTAMOS DEL EXTERIOR y C.N.A. POSTAL 100%	
	VENTA DE ACTIVO FIJO Dº LEY 505/58 ART. 18 g) 100%	

REPUBLICA ARGENTINA  
DIRECCION NACIONAL DE VIALIDAD  
PROYECCION DE ORIGEN Y APLICACION DE FONDOS  
1970-1979

APENDICE F

Millones de US Dólares

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>Tot</u>
os											
sto Especial a											
fta 1/	116,0	111,0	116,0	122,0	128,0	134,0	141,0	148,0	155,0	163,0	1.3
stos a los Combust.	102,8	109,5	115,7	120,8	126,6	133,4	140,1	147,0	154,7	162,5	1.3
st.a los neumáticos	51,6	53,0	54,9	56,5	58,3	60,0	61,7	63,4	65,4	67,4	5
impuestos	12,6	13,7	14,0	14,3	15,1	15,7	16,0	16,8	17,1	17,7	1
os No Tributarios	5,4	5,1	3,7	3,9	4,3	4,3	4,6	5,1	5,5	5,7	
es del Gob.y del Ext.	10,2	20,0	20,0	20,0	20,0	20,0	30,0	30,0	30,0	30,0	2
tal de Recursos	<u>298,6</u>	<u>312,3</u>	<u>324,3</u>	<u>333,0</u>	<u>352,3</u>	<u>367,4</u>	<u>393,4</u>	<u>410,3</u>	<u>427,7</u>	<u>446,3</u>	<u>3.6</u>
iones											
s de Personal	26,1	30,9	32,3	34,0	35,7	37,4	39,4	41,2	43,4	45,5	3
s y Serv.No Personales	13,1	14,0	14,6	15,4	16,0	16,9	17,7	18,6	19,7	20,6	1
y Amortiz.de Deudas	10,6	30,3	23,7	18,3	17,1	18,0	19,4	22,5	22,3	25,7	2
s de Capital	7,4	7,7	8,0	8,6	8,9	9,4	9,7	10,3	10,9	11,4	
de Trab.Públicos	179,8	167,7	180,9	194,3	203,7	212,3	230,3	237,7	248,6	256,1	2.1
icip.Federal a											
ncias	59,3	60,3	62,9	65,4	68,0	70,9	74,0	77,1	80,6	84,1	7
	<u>2,3</u>	<u>1,4</u>	<u>1,9</u>	<u>2,0</u>	<u>2,9</u>	<u>2,5</u>	<u>2,9</u>	<u>2,9</u>	<u>2,2</u>	<u>2,9</u>	
tal de Erogaciones	<u>298,6</u>	<u>312,3</u>	<u>324,3</u>	<u>338,0</u>	<u>352,3</u>	<u>367,4</u>	<u>393,4</u>	<u>410,3</u>	<u>427,7</u>	<u>446,3</u>	<u>3.6</u>

ente: Dirección Nacionalidad de Vialidad.

- 1/ Aunque la Ley 18.201 vence en 1974, la experiencia en Argentina con varias leyes impositiva de vigencia limitada es que son prorrogadas cuando están próximas a su término si las necesidades de los programas así lo aconsejan. En este caso específico las autoridades argentina nos han manifestado que se prevé la prórroga de esta Ley en consideración al amplio program de inversiones de la DNV. En todo caso la vigencia de esta Ley se extiende por todo el per de ejecución del programa.

REPUBLICA ARGENTINA  
DIRECCION PROVINCIAL DE VIALIDAD - ENTRE RIOS  
PROYECCION DE GASTOS OPERATIVOS E INVERSIONES  
1970-1974

APENDICE G

Miles de US Dólares

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
<u>Gastos Operativos</u>					
Gastos de Personal	434	479	525	580	637
Gastos Administrativos	70	75	80	83	86
Mantenimiento	<u>1.282</u>	<u>1.460</u>	<u>1.657</u>	<u>1.828</u>	<u>2.145</u>
Total de Gastos Operativos	<u>1.786</u>	<u>2.014</u>	<u>2.262</u>	<u>2.491</u>	<u>2.868</u>
<u>Inversiones</u>					
Obras	7.254	8.343	9.594	11.034	12.689
Conservación Vial	1.923	2.114	2.326	2.560	2.814
Otras	<u>29</u>	<u>43</u>	<u>57</u>	<u>85</u>	<u>114</u>
Total de Inversiones	<u>9.206</u>	<u>10.500</u>	<u>11.977</u>	<u>13.679</u>	<u>15.617</u>
Total de Erogaciones	10.992	12.514	14.239	16.170	18.485

Fuente: Dirección Provincial de Vialidad.

APENDICE H

REPUBLICA ARGENTINA  
DIRECCION PROVINCIAL DE VIALIDAD - CORRIENTES  
PROYECCION DE GASTOS OPERATIVOS E INVERSIONES  
1970-1974

Miles de US Dólares

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
<u>GASTOS OPERATIVOS</u>					
Gastos de Personal	1.130	1.243	1.368	1.504	1.655
Gastos Administrativos	84	92	101	112	123
Manutención	<u>1.017</u>	<u>1.126</u>	<u>1.245</u>	<u>1.373</u>	<u>1.514</u>
Total de Gastos Operativos	<u>2.231</u>	<u>2.461</u>	<u>2.714</u>	<u>2.989</u>	<u>3.292</u>
<u>INVERSIONES</u>					
Obras	10.228	8.832	3.462	4.038	5.926
Mantenimiento Vial	115	129	143	157	171
Industria	-	-	36	42	61
Total de Inversiones	<u>10.343</u>	<u>8.961</u>	<u>3.641</u>	<u>4.237</u>	<u>6.158</u>
Total de Erogaciones	12.574	11.422	6.355	7.226	9.450

Fuente: Dirección Provincial de Vialidad.

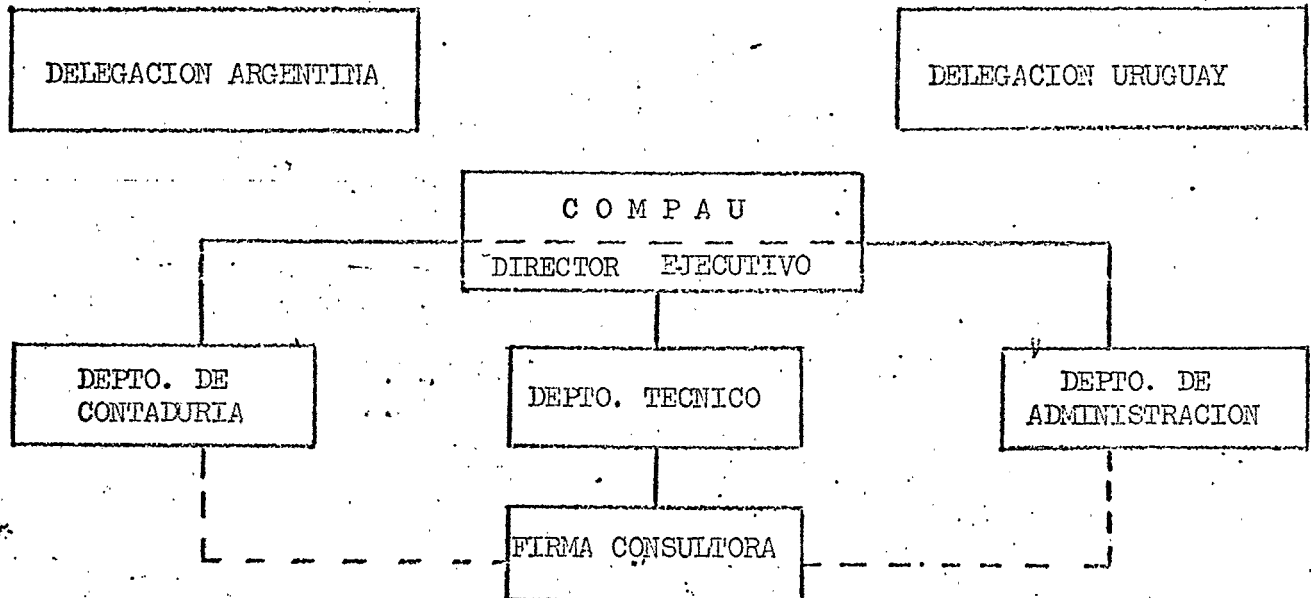


COMISION TECNICA MIXTA DEL PUENTE ENTRE  
ARGENTINA Y URUGUAY (COMPAU)

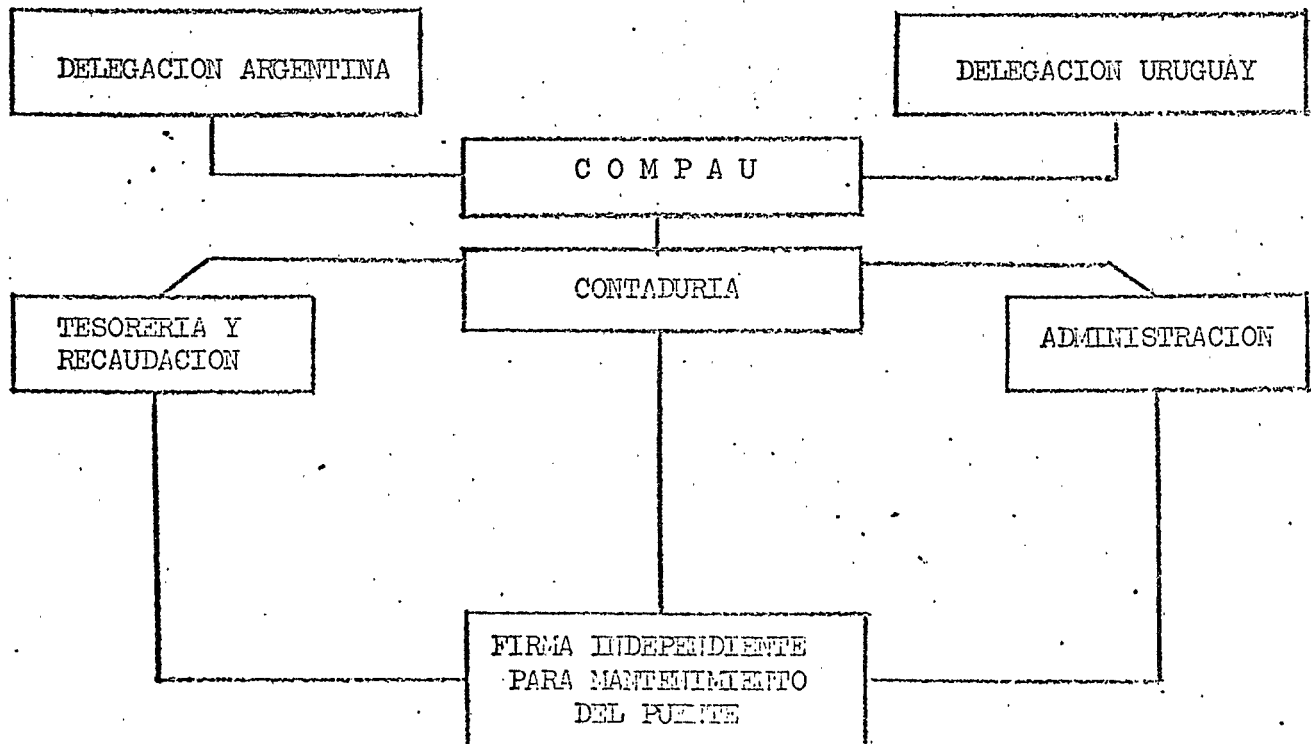
APENDICE "I"

ORGANIGRAMA PROYECTADO

(A) PERIODO DE CONSTRUCCION



(B) PERIODO OPERATIVO



COSTO TOTAL DEL PUENTE FRAY BENTOS-PUERTO UNZUE

ENTRE ARGENTINA Y URUGUAY

(En miles de US\$ o su equivalente)

R U B R O S	COSTOS EN DIVISAS			COSTOS MONEDA LOCAL	TOTAL	%
	DIRECTOS	INDIRECTOS	TOTAL			
a) Construcción puente	2.017	2.643	4.660	7.485	12.145	64,9
b) Estudios de factibilidad e ingeniería	680	-	680	-	680	3,6
c) Consultores para super- visión const. puente	600	-	600	-	600	3,2
d) Gastos de administración de COMPAU durante const.	-	-	-	300	300	1,6
e) Imprevistos	<u>350</u>	<u>529</u>	<u>879</u>	<u>1.424</u>	<u>2.303</u>	<u>12,3</u>
-De construcción	148	265	413	697	1.110	5,9
-Por elevación de costos	202	264	466	727	1.193	6,4
f) Otros gastos	<u>2.268</u>	-	<u>2.268</u>	<u>384</u>	<u>2.652</u>	<u>14,4</u>
Intereses (Préstamo CO)	1.667	-	1.667	328	1.995	10,6
Comisión de Compromiso (Préstamo CO)	283	-	283	56	339	1,8
Inspección y vigilancia BID	116	-	116	-	116	1,0
Intereses (Préstamo Re- cursos Argentina)	<u>202</u>	<u>-</u>	<u>202</u>	<u>-</u>	<u>202</u>	<u>1,0</u>
T O T A L	<u>5.915</u>	<u>3.172</u>	<u>9.087</u>	<u>9.593</u>	<u>18.680</u>	<u>100,0</u>
Porcentaje	31,6	17,0	48,6	51,4	100,0	

EFFECT OF THE PESO DEVALUATION UPON THE COST ESTIMATES  
(IN TERMS OF US DOLLARS) OF THE MESOPOTAMIAN HIGHWAYS  
AND FRAY BENTOS-PUERTO UNZUE BRIDGE PROJECTS - ARGENTINA

The total cost of the proposed highway and bridge program was estimated in the application at the equivalent of US\$82.8 million (excluding contingencies provided for possible cost increases during the construction period) of which US\$74.8 million equivalent was scheduled for local purchases.

Assuming no change in Argentine prices and costs, the immediate effect of the June 1970 devaluation of the peso by 14.3% would be to reduce the local cost component by about the equivalent of US\$9.4 million. However, program costs were in fact calculated on the basis of December 1969 prices and costs, and between that date and September 1970 construction costs have actually risen by 11.7%, of which 3.5% took place in September itself. It is therefore almost certain that by the end of 1970 the increase in internal construction costs will have offset completely the net effects of the devaluation, and it can be concluded that the cost estimates presented in the loan document in terms of US dollars remain valid.