

PUBLIC

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

**ARGENTINA**

**SPECIAL TECHNICAL COOPERATION PROGRAM**

**(TC7807235)**

**OPERATIONS PLAN**

**DECEMBER 20, 1978**

SPECIAL PROGRAM FOR TECHNICAL COOPERATION WITH RESOURCES FROM THE  
SOCIAL PROGRESS TRUST FUND

PLAN OF OPERATIONS

I. REQUEST

In light of the recommendations of the Board of Executive Directors regarding maximization of the use of local currencies from the recuperations of the of the Social Progress Trust Fund, the Bank initiated conversations with the Argentine authorities in the month of November of 1976. At the request of Argentine authorities in 1978 and 1977 Bank missions visited the country with the purpose of informing Argentine authorities regarding the basic requirements that had to be met by the proposed projects collaborating in their definition. The Ministry of Economics of the Argentine Republic presented to the Bank, on September 27, 1978, a request for partial financing, of two projects presented to the authorities of the Bank by the Ministry of Social Welfare in an amount of US\$15,000,000 on a non reimbursable basis. These projects constitute the basic purpose of this Plan of Operations.

II. DESCRIPTION OF THE PROGRAM

The program presented by the Argentine government is composed of the two projects which are described in detail in Annexes I and II of this Plan of Operations.

1. Community Development Project

The Community Development Project is composed of two subprojects to be carried out by the Secretariat of Urban Development and Housing in regions of extreme poverty in the Provinces of Santiago del Estero and La Rioja.

- A. Subproject of community development in the north of the province of Santiago del Estero. The subproject involves activities in the Departments of Copo and Alberdi which will promote the integral development of the zone. The government of the province has recently finished the construction of a cannal from the Rio Salado to Pampa de los Guanacos, which would provide potable water to the region for the first time. The construction of this waterway costs US\$3.5 million. The Government of the province proposes the execution of an investment and technical cooperation program. That would cover basic economic and social infrastructure. The resources of the contribution of the Bank for an amount equivalent to US\$4.8 million would be directed to:

- i) Improving the skills of the inhabitants of the area and stimulating the community organizations in the area.
- ii) Improving three groups of houses, previously erected in the area, which have deteriorated due to the lack of public services. These group of houses are located at Ifia, El Caburé and Los Pirpintos.
- iii) Supplying potable water to the communities of the area.
- iv) Preparing and implementing productive programs in the area specifically:
  - a) The designs and financing of an irrigation project in the area adjacent to Ifia for a total of 1.000 hectares and the setting up of a small irrigation zones in the neighbourhood of the other communities of the area.
  - b) The construction of basic infrastructure for the expansion of a forestry cooperative in the area of Los Pirpintos, and
  - c) The implementation of a plan for the settlement and cattle raising in uninhabited areas.

The Government of the province of Santiago del Estero will contribute a sum equivalent to US\$5.2 million. This sum would be directed for the financing for the following complementary work:

- i) The supply of electricity to the communities of the area.
- ii) Improvement of the health care provided by local hospitals, and the construction of medical outposts and a first aid station.
- iii) The construction of a provincial highway, and
- iv) Participation in the financing of the irrigation project, which would be carried out with the contribution of the Bank.

This subproject would benefit directly 13.000 people in the zone and in all another 20,000 people who do not live in the immediate area but who would be benefited by the construction of the highway and by the health program.

The economic infrastructure projects and the construction of the provincial highway would be carried out directly by the Government of the Province of Santiago del Estero. The other projects involving physical infrastructure and training would be carried out by the Fondo Nacional de la Vivienda through the Instituto Provincial de la Vivienda y Urbanismo of the Province of Santiago del Estero.

B. Community Development Subproject in the City of La Rioja

This subproject has as its main objective the rehabilitation, development and the provision of housing and urban infrastructure to the zone of Alta Rioja, which is adjacent to the capital city.

The zone has approximately 125 hectares and presents large ecological and social problems since it completely lacks basic infrastructure and it is isolated from the city by a seasonal waterway.

The resources of the Bank for an amount equivalent to US\$3.2 million would be earmarked for:

- 1) The clearing of the area.
- 2) The urbanization of the zone.
- 3) Supply of urban services to the areas set aside for housing.

On its behalf, the Government of the Province would supply resources equivalent to US\$1.5 million which would be directed towards:

- 1) The clearing and channeling of the river.
- 2) The construction of bridges.
- 3) The construction of roads between the zone and the city.

Finally, the FONAVI would construct in the urbanized zone a total of 1.000 houses with an investment preliminarily estimated at US\$10.000.000. Of these houses, at least 300, would be set aside for families already living in the area.

The program would benefit approximately 5.000 persons who would be settled in the area once the proposed works have been carried out.

The executing agency of the program would be the Fondo Nacional de la Vivienda, which would channel resources to the Instituto Provincial de la Vivienda y Urbanismo of the Province of La Rioja.

## 2. Infectious Endemic Diseases Projects

The health projects, under the responsibility of the Secretariat for Public Health would cover three types of campaigns for the control and eradication of infectious endemic diseases in Argentina:

- i) Chagas - Mazza Disease;
  - ii) Argentine Hemorrhagic Fever, and
  - iii) Leprosy.
- a) The campaign against Chagas-Mazza disease would be carried out through the implementation of two subprojects. The first would consist of a clinical survey of the population affected by the disease and of the socio-economic variables which bare on its propagation.

The identification and treatment of those affected by the disease would be carried out parallelly with a campaign for the dissemination of medical techniques which would create in the affected zones, professional teams trained for the maintenance of adequate levels of services once the subproject activities have been carried out.

The second subproject consists in the implementation of a pilot plan for the sanitary conditioning substandard which is one of the principal factors in the propagation of the disease.

Chagas-Mazza disease affects, in Argentina alone, approximately 3.5 million people, and has a serious incidence in the economic productivity of men between 20 and 40 years of age. It is estimated that no less than 700.000 people are affected by cardiac lesions as a result of this disease.

This project would include an important component of technical cooperation for Paraguay and Bolivia and for other Latin American countries seriously affected by this disease.

- b) The subproject for control of Argentine Hemorrhagic Fever has as its objectives the establishment of a system of epidemiologic vigilance that would lead to greater knowledge regarding the incidence of the disease in the affected zones of the provinces of Buenos Aires and Santa Fé. It would also entail the diagnosis and treatment of those affected by the disease with a resulting lowering of the death rate. Argentine Hemorrhagic Fever has as its most important epidemiologic characteristic, a progressive extension of the infected area, which at present includes the region of greatest population density and largest agricultural production in the entire country. In recent years there have been 18.000 cases of

this disease, and approximately between 1500 and 2000 people have died as a result .

c. Program for control and eradication of Leprosy.

This subprogram has as its objectives the carrying out of a campaign for the control and eradication of leprosy in the Argentine Republic. The program would have as its objective the identification and treatment of 90% of the known cases in the country. The program would be carried out through mobile units in the areas and communities known to be affected, and through the provision of equipment for the treatment of the disease in regional centers. It is estimated that there are approximately 20.00 cases of leprosy in the Argentine Republic.

The total amount of the contribution of the Bank for the health program would be in the equivalent of US\$7.000.000 which will be distributed as follows:

1. Chagas-Mazza Disease

a) Clinical and socio-economic aspects	US\$3.000.000
b) Demonstrative program for improvement of housing	US\$2.000.000

2. Argentine Hemorrhagic Fever 1.000.000

3. Leprosy 1.000.000

The Argentine Government would contribute through the Secretariat of Public Health a total of US\$11,000,000 which will be distributed as follows:

Chagas-Mazza Disease	US\$3,500,000
Argentine Hemorrhagic Fever	3,500,000
Leprosy	4,000,000

### III. OBJECTIVES

With the ultimate objective of providing better living conditions to sectors of the Argentine population living in situations of extreme poverty, the program under consideration would attempt to meet the following objectives:

- 1) The promotion of the integrated development of a zone in the province of Santiago del Estero which would lead to the permanent settlement of a population which is now partially migratory and whose living conditions have led to serious economic problems and to a deterioration of socio-cultural conditions of the population.

- 2) To facilitate the incorporation of families settled in conditions of extreme poverty in the region of the city of La Rioja and provide them with services, basic infrastructure and housing.
- 3) To carry out an intense sanitary campaign for combatting infectious endemic diseases such as Chagas Mazza whose primary incidence is on lower income sectors, and which present an increasing danger to the rural Argentine population as well as to the population of other member countries of the Bank.
- 4) To contribute to the implementation of programs for the control and eradication of Leprosy and Argentine Hemorrhagic Fever, disease which affect primarily extremely poor sectors of the population.

#### IV. ELIGIBILITY OF THE PROJECTS

The projects which are described in the Annexes of this Plan of Operations are considered eligible for the financing on a non-reimbursable basis with resources and local currencies from the social progress Trust Fund for the following reasons:

- a) The projects included in the program fall within one of various of the following areas of eligibility of the Social Progress Trust Fund, in particular:
  - i) Settlement and better use of land.
  - ii) Housing for very low income sectors.
  - iii) Community sanitary facilities and provision of potable water.
  - iv) The financing of complementary facilities for advanced education and the training related to socio-economic development.
  - v) The support of credit union and cooperatives.
- b) The beneficiaries of both projects belong to the lowest income sectors in the Argentine population. In every case the average annual family income is less than US\$1.000. The activities contemplated in different projects emphasize direct and immediate aid to the beneficiaries, thus excluding in every case all activities relating to research or investigation whose results could only be enjoyed in the long term. In those cases where other indirect beneficiaries exist, these are generally in even lower income brackets.

## V. COST AND FINANCING

The total cost of the Bank's contribution to this program would not exceed the sum of US\$15.000.000 in Argentine currency.

The budget for each of the projects is described in detail in the corresponding annexes. Below is a detail of the global contribution of resources for this special program in US\$ equivalent:

	<u>IDB Contribution</u>	<u>Local <sup>1/</sup> Contribution</u>	<u>Total Cost</u>
<b>I. <u>Community Development Project</u></b>			
A. Province of Santiago del Estero	4.8	5.2	10.0
B. Province of La Rioja	3.2	11.5	14.7
<b>II. <u>Infectious Endemic Diseases Project</u></b>			
A. Chagas-Mazza Disease	5.0	3.5	8.5
B. Argentine Hemorrhagic fever	1.0	3.5	4.5
C. Leprosy	1.0	4.0	5.0
<b>Total</b>	<u>15.0</u>	<u>27.7</u>	<u>42.7</u>

## VI. FUND

The Bank's contribution on a non-reimbursable basis will be financed with resources from the Social Progress Trust Fund in Argentine pesos.

## VII. DISBURSEMENTS

The Bank would provide the Ministry of Social Welfare with the equivalent of US\$3.000.000 for the purpose of setting up a revolving fund in the Banco Hipotecario for the disbursements to the executing agencies, namely the Fondo Nacional de la Vivienda and the executing agency of the Ministry of Public Welfare. The Ministry of Social Welfare will deposit the resources in special accounts in the said Bank for the Secretariat of Health, the FONAVI and the Government of the province of Santiago del Estero for the financing of expenses related to the carrying out of the proposed activities in the Annexes of this Plan of Operations.

This revolving fund will be replenished at the request of the Ministry of Social Welfare as the Ministry shows to the satisfaction of the Bank that it has spend or obligated the requested sums.

Prior to the first disbursement to the program for control of infectious endemic diseases, the Secretary of Public Health must establish an executing agency for the project which would be responsible for administering and controlling the programs for the Control and Erradication of Chagas-Mazza Disease, Argentine Hemorrhagic Fever and Leprosy.

Each of the executing agencies will present to the Ministry of Social Welfare, through either the Secretary of Housing or the Secretary of Public Health a financial program prior to the first disbursements. This timetable must be previously approved by the Ministry of Social Welfare.

The revolving fund may be replenished as many times as is necessary until the previously assigned fund of US\$15.000.000 is exhausted, in the understanding that up to US\$8.000.000 would be earmarked for the community development project and US\$7.000.000 for the health project.

#### VIII. AGREEMENTS

The Bank and the Ministry of Social Welfare will sign an agreement within 90 days after the approval of this Plan of Operations by the Board of Executive Directors. This agreement will establish in detail the obligations and responsibilities of the executing agencies of the subprojects. The Secretariat of Housing and Urban Development will sign letter of understanding with the Institutos Provinciales de Vivienda y Urbanismo of the provinces of La Rioja and Santiago del Estero. These letters of understanding must include the programming of the use of resources and the execution period for the works to be undertaken and other relevant technical details. The Secretariat for Public Health will sign letters of understanding with the Instituto para el Estudio de la Ciencia Latinoamericana and with the Consejo Nacional de Enseñanza Técnica wherein will be defined the responsibilities in the execution of the subprogram which make up the campaign against Chagas-Mazza Disease. These letters of understanding must also include the programming and the use of resources which will be assigned to these agencies, and other technical specifications.

#### IX. REPORTS

At the end of each calendar year the executing agencies must send to the Ministry of Social Welfare, with copies to the Bank, partial progress reports on the development of the activities carried out in this period as well as an estimate regarding the activities that are expected to be carried out in the following year.

2.

2. At the end of the executing period of each specific project the agencies will present to the Ministry of Social Welfare with copies to the Bank a final report regarding its execution including information regarding the use of resources. This final report must be

audited by the Tribunal de Cuentas of the Argentine Republic in a form acceptable to the Bank.

3. At the end of the fifth year from the signing of the agreement the Ministry of Social Welfare will present to the Bank a final report regarding the overall result of the execution of the activities described in the Annexes. This final report must be audited in its financial and accounting aspects by the Tribunal de Cuentas of the Argentine Republic, in a form acceptable to the Bank. It must be noted that in those cases where the execution of the project implies recuperations which may have resources available after the fifth year, the Ministry of Social Welfare will only be obligated to dedicate such funds in following years to fulfill objectives similar to those proposed in this Plan of Operations.

#### X. DISBURSEMENT PERIOD

The final period for disbursement for the utilization of resources assigned in this Plan of Operations would be four years counted from the date of signing of the Agreement, and any remaining balances which have not been spent or obligated at that date will be cancelled. Nevertheless this period may be extended by the Bank at the request of the Ministry of Social Welfare.

#### XI. EVALUATION CRITERIA

The evaluation of this technical cooperation operation will be carried out through the analyses of the degree of attainment of the objectives outlined in this Plan of Operations and on the basis of the previously described reports.

#### XII. RESPONSIBILITY

The Representation in Argentina would supervise the execution of this program. Towards this end it will maintain itself in contact with the Ministry of Social Welfare which will have the responsibility for executing this special program. The Representation may request from Headquarters help in the supervision of the execution of the program.

**PROPOSED RESOLUTION**

**ARGENTINA. SPECIAL PROGRAM OF NONREIMBURSABLE TECHNICAL  
COOPERATION**

**(Social Progress Trust Fund)  
Community Development and Control and  
Erradication of Endemic Diseases Projects**

**The Board of Executive Directors**

**RESOLVES:**

That the President of the Bank, or such representative as he shall designate is authorized, in the name and on behalf of the Bank, to enter into such agreements as may be necessary and to adopt such other measures as may be pertinent for the execution of the plan of operations referred to in Document AT-471 with respect to carrying out (i) a project of community development in the Provinces of Santiago del Estero and Rioja, and (ii) a project of control and erradication of endemic diseases, within a Special Program of Nonreimbursable Technical Cooperation with the Government of Argentina.

2. That up to the equivalent of US\$15,000,000 is authorized for the purposes of this resolution, chargeable to the resources of the Special Progress Trust Fund, in accordance with the following distribution: (i) up to the equivalent of US\$8,000,000 for the project indicated in 1(i) above, and (ii) up to the equivalent of US\$7,000,000 for the project indicated in 1(ii) above.

3. That the above-mentioned sum is to be disbursed entirely in Argentinian pesos and provided on a nonreimbursable basis.

# I. PROJECT FOR COMMUNITY DEVELOPMENT IN DEPRESSED AREAS OF THE ARGENTINE NORTHWEST

This project would comprise two community development subprojects, one in the northern part of the province of Santiago del Estero and the other in an area adjacent to the city of La Rioja.

The Bank's contribution to the execution of this project would total US\$8 million. The national counterpart, US\$6.7 million, would consist of contributions from the governments of the provinces of La Rioja and Santiago del Estero and from the National Housing Fund (FONAVI).

## A. NATIONAL FRAME OF REFERENCE

### Urbanization in Argentina

The population of the Argentine Republic displays two separate trends: first, its growth rate is particularly low, the second lowest among all Latin American countries, and second, it is highly urban, with nearly 80% of the population living in towns of more than 2,000 inhabitants.

Urbanization developed early, reaching high levels before the 1950s; in 1960, 79% of the urban population lived in cities of more than 100,000.

Provincial administrative units are marked by high urban dominance, with over 50% of the population living in the principal city, which is often also the capital of the province.

The accelerating urbanization rate is evident from the table below:

YEAR	TOTAL POPULATION	% POPULATION	
		URBAN	RURAL
1869	1.737.076	26.6	73.4
1895	3.954.911	37.4	63.6
1914	7.885.237	52.5	47.5
1947	15.893.827	62.5	37.5
1960	20.018.793	70	30
1970	23.364.431	78.9	21.1

The population of urban centers of over 30,000 rose from 3 million in 1914 to 15 million in 1970.

The high urbanization rate is now clear from the fact that in only five provinces (Catamarca, Chaco, Formosa, Santiago del Estero, and Misiones) does the rural population exceed the urban.

Fifty-five per cent of the population lives in cities of over 350,000, with 35.7% in the Federal Capital and Greater Buenos Aires (8,435,840) and the remaining 12% in five cities of 350,000-800,000 (Rosario, Córdoba, La Plata, Mendoza, and Tucumán).

Among cities of intermediate size, 7% of the population lives in nine cities of 150,000-300,000 and 5% in 18 cities of 45,000-100,000.

Seven and a half per cent lives in 71 cities of 15,000-45,000.

The pre-urban level in the national urban system is made up of settlements of 500-2000 inhabitants; their total population is 842,324, living in 820 centers of rural services.

The acceleration of the urbanization process is not accompanied by integrated development of the centers, but simply adds more inhabitants to existing urban areas that lack sufficient facilities and services.

The low population density, which averages eight inhabitants per square kilometer, is reflected in the great distances between populated centers, pointing up the important part to be played by smaller centers as regional service centers, many of which have facilities in excess of the requirements of their size rank in the national system.

Although 1960-1970 demographic trends show rapid growth of the smaller centers, principally in the west, these now exhibit a tendency to shrink.

In the northwest in particular, this situation is accompanied by intensive centralization, with a population concentration in the capital city larger in proportion than that for the metropolitan area of Buenos Aires in relation to the country as a whole.

This region is losing population rapidly as a result of the precarious living conditions there and of a job shortage due to insufficient cumulative development factors. The resulting situation requires immediate attention if living standards are to be improved.

In view of the variety of socio-economic situations in Argentina, a wide spectrum of solutions is required. Although Argentina has a relatively high per capita income in comparison with other Latin American countries, it is very unevenly distributed from region to region. There are provinces such as La Rioja and Santiago del Estero with income below that of the least developed countries on the continent (see Tables 1 and 2 below).

Furthermore, in any region or province in the country, it is easy to find more specific examples of populations whose monthly family income averages not more than US\$50, that is, an approximate per capita income of US\$120-140.

TABLE 1

PER CAPITA GROSS DOMESTIC PRODUCT (In US\$) <u>1/</u>		
	Year 1965	Year 1968
Country Total	1130,00	1285,00
Catamarca	183,92	255,26
Formosa	201,23	261,58
La Rioja	191,09	257,67
Santiago del Estero	167,26	204,60

1/ Instituto Nacional de Estadísticas y Censos. Market price values. Geographic Gross Product Year 1976.

There is a very close correlation between employment opportunities and migratory movements. The provinces with the lowest per capita product are the provinces losing population, with two areas definable in the country, those absorbing and those losing population, the latter being the provinces where the product is far below the national average.

TABLE 2

## PER CAPITA GROSS DOMESTIC PRODUCT (In US\$)

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<u>ARGENTINA</u>	<u>1965</u>	<u>1968</u>
	1065    1139 (BCRA) (1)	1285 (BCRA) (1)
Catamarca (2)	183,92	255,26
Formosa (2)	201,23	261,58
La Rioja (2)	191,09	257,67
Santiago del Estero (2)	167,26	204,60
	<u>1965</u>	<u>1970</u>
BOLIVIA (3)	216	260
HAITI (3)	102	99
HONDURAS (3)	273	289
DOMINICAN REPUBLIC (3)	279	347

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1. The data supplied by the Central Bank of the Argentine Republic are at market prices ("National accounts of the Argentine Republic" Vol. III. 1976).
2. The figures corresponding to the Argentine provinces are at market prices. Their source is the National Institute of Statistics and Census. (Gross geographic products, 1975).
3. The figures for the Latin American countries have as their source the "Indicators of Social and Economic Development in Latin America". Statistical Yearbook of CEPAL. 1976.

The uneven distribution of the gross product throughout the country becomes worse when the distribution of income over various family levels is investigated. The bottom 10% of Argentine families receives 2.9% of the total income, an average 13.5 times below the top 10%. This estimate was made by ECLA and is tabulated below.

TABLE 3

Income Group	Total Income Distribution	Medium Income	National Average Income = 100
1° decil	2,9	740	29
2°	4,1	1030	41
3°	4,8	1220	48
4°	5,5	1370	55
5°	6,1	1520	61
6°	7,0	1750	70
7°	8,0	2020	80
8°	9,6	2430	96
9°	12,9	3250	129
10°	39,1	9840	391
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5% Superior	29,4	14800	588
1% Superior	14,5	36500	1450

CEPAL - Studies on Income Distribution in Latin America. United Nations 1967 - page 31.

### National urban development policies

Current Argentine urbanization trends are generating grave internal disequilibria in the structure of the national urban system and functional inadequacies in the nuclei of the system.

The urban development policies of the Office of the Secretary for Urban Development and Housing in the Ministry of Social Welfare are designed to reverse this process of deterioration, which, particularly in the medium-sized and small centers of the northwest, has inflicted on large and potentially rich communities a state of indigence incompatible with the just and reasonable aspirations of the people to an adequate quality of life.

For these communities in particular, an attempt is being made to act principally to resolve the following basic difficulties:

- The serious long-term depopulation of the northwest, especially the emigration of the economically active population, as a result of high unemployment rates and health and education problems. This thinly populated region will continue to lose populations, and opportunities to take effective advantage of regional potentialities will therefore continue to decrease.
- A shrinkage of small and medium-size centers, which in the rest of the country grew rapidly during the census period 1960-1970.
- Dominance of one urban center, the capital of the province, in all of the northwest territories.
- Inadequate basic infrastructure of services and facilities in small centers and medium-sized cities, where the serious shortage of these is contributing to the loss of population.
- Inadequate provincial and local ability to finance urgently needed infrastructure.

The provincial economies, often subsidized by the State, are meeting essential administrative and development needs with only a small margin remaining for urban programs. The shortage of local resources is preventing the execution of many projects to improve the situation in smaller centers.

Among national urban development policies, top priority has been allocated to the correction of the inadequate development of medium-sized and smaller cities that lack sufficient infrastructure, two objectives being:

- To help provide physical and social infrastructure for medium-sized and smaller urban nuclei that lack sufficient facilities, ensuring their ability to function and improving the living standard of the population.
- To establish better balance between urban and rural areas, bringing services to centers that can extend them to the rural populations of the surrounding areas, so that the benefit would accrue to a wider population than that of the center itself, making these centers more efficient in performing their regional duties.

FONAVI is the mechanism used by the National Government through the Office of the Secretary of State for Urban Development and Housing to finance housing and infrastructure projects. This Fund, which is formed with 5% of the wages of Argentine workers, contributed by employers, has made it possible to strengthen the provincial institutions responsible for urban development and housing, which have initiated projects the results of which are now becoming visible. FONAVI may finance housing for families whose income, once basic necessities are met, does not allow them to bear the lowest of the interest rates set by the Banco Hipotecario.

The Office of the Secretary of State for Urban Development and Housing establishes national policies and decentralizes the execution of plans and projects to provincial organizations, which have been converted to independent institutions when they manage funds from FONAVI. In this way the provinces have available an important resource that they can use in accordance with their own urban policy needs.

Some special projects are channeled through:

- a. The execution of technical assistance agreements for urban development to help the provinces identify priorities for investment in social infrastructure and services, proposing at the same time the training of local officials in the formulation, execution, and evaluation of projects. This stage is now in progress, and it thus becomes necessary to begin the next, which is the search for the financing which will make execution of the project possible.
- b. Assistance in the development of special programs carried out by the provinces through their specialized services to achieve perfect coordination of the objectives of a better environment through adaptation to change and access to modern housing, the Organization of Cooperatives, and production and consumption, with which these communities can act more effectively to protect their labor and production, along with improvements in educational, cultural, and health levels. These projects are a local responsibility and are carried out as a counterpart by the provincial governments.

Following the above criteria, two projects have been selected: the urban rehabilitation of Alta Rioja in the capital city of La Rioja, and the construction of infrastructure and housing renovation in five localities in the province of Santiago del Estero, these being considered priority projects for the balanced urban development of areas where there are definite possibilities for present and potential development.

## B. SUBPROJECT FOR COMMUNITY DEVELOPMENT IN THE NORTHERN PART OF THE PROVINCE OF SANTIAGO DEL ESTERO

### 1. Introduction

This project is designed to support efforts of the government of the province of Santiago del Estero to promote the economic and social development of a group of marginal communities on the Monte Quemado/Pampa de los Guanacos axis. Among the objectives of the project are the formation of cooperatives, the training of the population, the supplying of drinking water and electric power, the improvement of housing, the expansion of productive irrigation and lumbering cooperatives, the expansion of livestock production, the improvement of health services, and the construction of an area highway system.

This project will benefit some 13,000 persons directly.

The Bank's contribution is estimated at the equivalent of US\$4.8 million in Argentine pesos. The funds will be channeled to the government of the province of Santiago del Estero and, through FONAVI, to the Provincial Institute of Housing and Urban Development.

### 2. Economy of the Province of Santiago del Estero

In 1960-1968 Santiago del Estero had the lowest per capita gross dollar product in the country. The 1968 figures were:

Argentina	US\$1,285.00 per capita
Santiago del Estero	US\$ 204,60 per capita

These figures clearly locate the province in relation to the national frame of reference.

If Santiago del Estero is compared with the least developed Latin American countries, we see that in 1970 Haiti had a per capita product of US\$99, Bolivia, US\$260, and Honduras US\$289. Santiago is thus down with these seriously underdeveloped countries.

When the participation of the various sectors in the provincial gross product is analyzed, it becomes clear that the relative weight of each of them is very different from what it is for the rest of Argentina.

On the average for the entire country, ca. 15% of the product comes from agriculture and 35% from manufacturing. The opposite is the case in Santiago del Estero, where crop-growing represents 25% and livestock-raising 30% of the gross internal product and lumbering 7%, with manufacturing representing only 9.5%.

Industry in the province is concentrated on processing agricultural and extractive products.

Lumbering was of great importance in the provincial economy from the beginning of the century until the 1940s. For a better idea of its relative weight, note that 75% of the total area of the province was wooded in 1900, representing 10% of the wooded area of Argentina. With the appearance of synthetics and the drop in demand for railway sleepers, production fell off considerably, adversely affecting one of the principal sources of jobs in the province, lumber camps.

In short, the province of Santiago del Estero not only has the lowest per capita gross product in the country but the physical structure of an underdeveloped region as well. A raw-materials sector with 32% of the product, a third-level sector with about 50%, and manufacturing on the decline at less than 10% of the total product--these are symptoms of a deficit economy.

### 3. Description of the area

Geographic location: The department of Copo and Alberdi are in the northeast of the province, bordering on the provinces of Salta and Chaco. They are a part of the Chaco physical region and are the principal lumber-producing departments in this part of the province. Three fourths of the land in these departments is in the government forest reserve. The rest of the land, which is privately owned, is also used for lumbering and cattle-raising, with the exception of a small fringe area on the Rio Dulce, which is farmed under irrigation.

#### Population:

The total population of the department of Copo was 17,000 according to the 1976 census, representing 2.8% of the total population of the province, with a density of 1.1 per square kilometer. The capital of Monte Quemado, with a population of 4,046. Other towns in the department are Ifia, Urutaú, Los Tigres, El Caburé, Los Pirpintos, and Pampa de los Guanacos. The project will also affect of the Department of Mariano Moreno.

The department of Alberdi has a population of 14,000 with a density of 1.0 h per square kilometer, and a total estimated at 2.5% of the province. Its chief town is Campo Gallo.

The affected zone in the Department of Mariano Moreno has approximately 2,000 persons.

### Economy

The subsistence economy based on the intensive and destructive exploitation of the forests has been the determining factor in the area's development.

The basic economic activity in the department of Copo is lumber production, since, together with the departments of Alberdi, Matará, and Moreno, it produces 64% of the logs, 74.6% of the lumber, 65.4% of the posts, and 41.3% of the charcoal. Over three fourths of this production comes from Copo and Alberdi.

Industrial activity is concentrated on the transformation of raw timber and centered in lumber camps.

### Social structure:

A prime distinguishing characteristic of society in the project area is that it exhibits the typical bell-shaped social pyramid of an underdeveloped society, with the great majority of the population at the base, a very small elite at the top, and a great distance or social gap between them. This last trait in itself suggests that possibilities for social mobility are very poor.

At the bottom are (1) workers in the infant lumber industry, which is little more than a craft and contributes little added value to the raw material, (2) unskilled marginal urban sectors on the town outskirts, and (3) the rural population (cattle watchmen, squatters, and woodcutters).

### Standard of living:

This varies widely depending on whether the subject is employed in the most active economic sector, representing public employment and trade in Monte Quemado and Pampa de los Guanacos. Here there is a steady level of income and modest, though difficult, access to basic necessities. The Los Pirpintos cooperative is an exception; it has a very acceptable level of income but has not raised living standards.

The position of cattle watchmen and woodcutters is much more serious, since not only is their income below acceptable levels but their living conditions approach the primitive.

### Housing and Health:

Houses are made from local materials, mainly wood, with clay and branches as insulation. The roofs are nests of vinchucas (a kind of winged bed-bug), making Chagas's disease endemic in the area.

An inadequate diet which includes neither vegetables nor fresh greens in sufficient quantity, plus a complete lack of health control, is the cause of the tuberculosis which decimates the young people in the wooded regions. In the north of Santiago del Estero, the subsoil has a high arsenic content which makes the water undrinkable. The people drink it nonetheless, and the effects of arsenic poisoning can readily be seen in them. The Canal de Dios brings water from the Rio Salado which is free from arsenic but requires treatment to make it drinkable, so that treatment plants should be built at each settlement. The water is now used directly from the river.

Average income in the project area:

An on-site survey at the project area produced annual family income for two towns in the area: El Caburé and Los Pirpintos.

The two differ considerably as to average income, mainly because of the Los Pirpintos lumbering cooperative. The figures are:

El Caburé	US\$240.00
Los Pirpintos	US\$500.00

Source: Provincial Institute of Housing and Urban Development, August 1978.

4. Objectives of the Subproject

The principal objective of the subproject is to improve the living standards of the population along the Monte Quemado/Pampa de los Guanacos axis by a community development program covering the following activities:

- (a) Training
- (b) Consultation on cooperatives and community organization
- (c) Renovation of 328 dwellings in Ifia, El Caburé, and Los Pirpintos
- (d) Supply of drinking water to Ifica, Urutaú, El Caburé, and Los Pirpintos.
- (e) Expansion of power generating capacity in the area
- (f) Establishment of 1500 ha. of irrigated land
- (g) Expansion of the productive capacity of the Los Pirpintos lumber camp
- (h) Colonization plan for livestock production
- (i) Rural health services program
- (j) Construction of highways.

5. Description of subproject activities

Activities under the community development program are described below:

a. Training of human resources

Location: Sachayoj, Pampa de los Guanacos, Los Pirpintos, El Caburé, Ifia, and Urutaú, in the departments of Copo and Alberdi.

Objective

To furnish settler in the area with the technical information required for production, especially where there are significant plans for economic transformation.

The work would be done in the following stages:

- i. Survey of types of work and production. Special emphasis would be placed on finding ways of incorporating the family in the work. Data would also be taken on the use of tools and machinery, in an attempt to determine the producer profile closest to the most advanced working methods.
- ii. Analysis and interpretation of the information and formulation of a pilot training plan in the fields of:
  - Non-irrigated crop production
  - Irrigated crop production
  - Livestock production
  - Industrial production of wood products
  - Processes related to water and power services
  - Processing of food products
- iii. Evaluation of results

The project would be carried out by the Ministry of Social Welfare.

The period of execution would be 14 months.

This project would be financed with Bank resources.

b. Training and consultation on cooperatives and community development

Location: Urutaú, Ifia, El Caburé, Los Pirpintos (Copo), Sachayoj and Campo Gallo (Alberdi).

### Objectives

The subproject is designed to (1) provide information about cooperative principles and methods in the medium-sized towns in the area, in order to promote cooperative activity that would offer reasonable chances of success in production, marketing, and consumption, and (2) improve community organization and orient the efforts of the few existing organizations and those to be formed to meet the needs of the communities, especially in regard to health, education, and community training.

Stages of work: The following activities would be completed to fulfill the first objective:

- i. Preparation of the material: documentation and training of squads of instructors to be responsible for execution of the subproject.
- ii. Holding of meetings to explain to settlers in the various localities the different aspects of cooperative organization. Member of cooperatives in the region should participate to illustrate the advantages of cooperatives from their own experience.
- iii. Promotion of school cooperatives, a measure shown to be effective in Santiago del Estero, which has produced many nursery-school cooperatives. Teachers in primary schools in the area would take part.

The following work would be done to achieve the second objective: diagnostic activities, the preparations of working plans, execution of these plans, and evaluation of results.

The execution of this project would be the responsibility of the Ministry of Economic Affairs (objective 1) and the Ministry of Social Welfare (objective 2) of the province of Santiago del Estero.

The period of execution of these activities would be eight months.

This project would be financed with Bank resources.

### c. Housing Renovation

Location: Ifia, El Caburé, and Los Pirpintos

### Objective:

The renovation and incorporation in the local housing supply of 328 dwellings, distributed as follows:

Ifia	128 dwellings
El Caburé	100 dwellings
Los Pirpintos	100 dwellings

Description:

The renovation of 328 dwellings built by the Provincial Institute of Housing and Urban Development, which were completed in 1974, is a necessary measure for the formation of a nucleus of housing which could not be achieved at the time for lack of basic infrastructure (water and electric light).

The fact that the dwellings have stood empty for four years has produced the inevitable deterioration, principally in the form of the poor condition of the roofs, plaster, and plumbing, which, along with the repair of woodwork, are the most important elements of the restoration. Boundary walls, not provided for in stage 1, must also be built.

At least 500 meters of land around the housing will also have to be cleaned up and the houses and surrounding area fumigated, as a health measure and for the protection of settlers against vinchuca and other insects.

Provision would therefore be made under this project to repair the houses to bring them to local standards of minimum habitability.

The project would be executed by the Provincial Institute of Housing and Urban Development of Santiago del Estero. It would take six months. Local labor would be hired insofar as possible for carpentry and cleaning, supplies, and construction.

This project would be financed with Bank resources.

d. Water supply

Location: Urutaú, Ifia, El Caburé, and Los Pirpintos

Objective:

To provide the basic infrastructure to supply drinking water to communities on the Monte Quemado/Pampa de los Guanacos axis.

Description:

## i. Urutaú

The project provides for a tilting-gate intake on the Canal de Dios from which the untreated water would move to an elevated

storage tank. The water would be disinfected by chlorination. Consumers would have house service with flow-rate controls. Public taps would be installed for those whose houses were outside the system. The system would be 5000 m. long and serve 310 persons.

Project implementation would take seven months.

ii. Ifia

The project would require an intake of crude water from the canal. The reserves of crude water would be maintained by the construction of two reservoirs which would be used as natural decanters.

Two floating intakes would send the water to a collecting chamber and then to the suction chamber where it would be pumped to an elevated storage tank. Filters would be fitted in a filtration room.

Dwellings located outside distribution network would be served by neighbourhood spiggots.

The distribution system would be 4230 m long and serve 735 people. The work would take 10 months.

iii. El Caburé

The project would require an intake of crude water from the canal. The reserves of crude water would be maintained by the construction of two reservoirs which would be used as natural decanters.

Two floating intakes would send the water to a collecting chamber and then to the suction chamber where it would be pumped to an elevated storage tank. Filters would be fitted in a filtration room.

Dwellings located outside distribution network would be served by neighbourhood spiggots.

The distribution system would be 8.500 m. and serve 1.200 people. The work would take 10 months.

iv. Los Pirpintos

The project would require an intake of crude water from the canal. The reserves of crude water would be maintained by the construction of two reservoirs which would be used as natural decanters.

Two floating intakes would send the water to a collecting chamber and then to the suction chamber where it would be pumped to an elevated storage tank. Filters would be fitted in a filtration room.

Dwellings located outside distribution network would be served by neighbourhood spiggots.

The distribution system would be 9.600 m. long and would serve 1.500 people.

The work would take 10 months.

v. Water source

The supply source for these projects would be the Canal de Dios. This canal is now being built by a Commission for Research, Development, and Construction of the Canal de Dios, made up of members of the Provincial Highway Council and the Office of the Technical Secretary for Research and Development of the General Bureau of Water Resources of the province of Santiago del Estero.

It is to be built from the intake on the Rio Salado to Monte Quemado, unlined, 2,5 m wide at the top, and from there to Pampa de los Guanacos, 1 m. wide at the top.

This canal has been designed to supply irrigation, drinking, and farm water, covering an irrigated area of 100 ha for the villages of Urutaú, Ifia, Los Tigres, El Caburé, Los Pirpintos, and Pampa de los Guanacos, and 500 ha for Monte Quemado.

The Rio Salado intake will yield a flow rate of  $3.5 \text{ m}^3/\text{sec}$  at Monte Quemado.

Cleaining and maintenance are to take not more than 45 days. The most critical period will be used as the basis for calculating reserve supplies.

vi. Execution

The project would be executed by the Ministry of Public Works of the province of Santiago del Estero through the Bureau of Hydraulic Resources, which would take bids for the work and supervise its execution. The rates for service would be those of the National Drinking Water and Electric Power Service of Santiago del Estero.

This project would be financed with Bank resources.

e. Expansion of power generating capacity

Location: Department of Copo and Alberdi

Description:

The locations of the towns in the area under study, their varying degrees of development and population differences, the fact that only two of them have an electric power supply and that there are no external power sources for some areas--all this has made it necessary to group the villages in two power subsystems, each with a central power station.

Subsystem I would generate power at Monte Quemado and transmit it to housing in Ifia, Los Tigres, and El Caburé.

Subsystem II would generate power at Pampa de los Guanacos and transmit it to Los Pirpintos, Coronel Rico, and Sachayoj.

All units in the system would be Diesel generating sets, the characteristics of which are suited to operation at these sites.

The project would benefit the population of the Monte Quemado/Pampa de los Guanacos axis, estimated at over 13,000 persons.

It would be executed by the Ministry of Public Works, Power Division, and would take twelve months. This project will be financed through the contribution of the Province of Santiago del Estero.

The rates would be those of the National Drinking Water and Electric Power Service for the province of Santiago del Estero.

i. Expansion and remodelling of power station

Location: Monte Quemado (Copo)

Description:

The generating station must be expanded to supply power to Los Tigres, El Caburé, Ifia, and their zones of influence, which have no power.

Since the present generator rooms are too small to take the new sets, it has been decided to seek an overall solution that would permit future expansion of generating capacity.

The following work will be carried out:

Generator room: This would be a new building constructed on the modular system, large enough for a 1000-Kw generating set with control consoles and auxiliary installations.

Electromechanical fittings: Foundations and bedplates would be built for the generator sets in each generator room, sized and with specifications to suit the generators. Pipe alleys would be built for underground installations: power lines, water-cooling lines, compressed-air lines, and fuel lines.

The project would be executed by the Ministry of Public Works, Power Division, which would take bids for the work. Execution time will take eight months.

ii. Expansion and remodelling of power station

Location: Pampa de los Guanacos (Copo)

Description:

The generating station at Pampa de los Guanacos must be expanded to supply power to Los Pirpintos, Coronel Rico, Sachayoj, and their zones of influence.

Since the present generator rooms are too small to take the new sets, it has been decided to seek an overall solution that permit future expansion of generating capacity.

The following work would be done:

Generator room: This would be a new building constructed on the modular system, for a 1000-Kw generating set with control consoles and auxiliary installations.

Electromechanical fittings: Foundations and bedplates would be built for the generator sets to be installed in each generator room, sized and with specifications as in the attached drawings. Pipe alleys would be built for underground installations: power lines, water-cooling lines, compressed-air lines, and fuel lines.

The project would be executed by the Ministry of Public Works through the Power Division. It would take eight months.

iii. Medium-voltage line from Monte Quemado to El Caburé

Location: Department of Copo

Description:

A 33-Kv transmission line would be run from Monte Quemado to El Caburé via Los Tigres, all of which are on National Route 16 covering a total distance of ca. 55 km. All of these villages are in the Department of Copo.

Low-voltage and public lighting systems would be built at Ifia, 9 km from Monte Quemado, Los Tigres, and El Caburé, with the corresponding substation.

All transformer substations would be on platform systems.

Foundations would be of plain concrete. The system would be supplied by the Monte Quemado power station.

The Ministry of Public Works (Power Division of Santiago del Estero) would execute the project. The work would take 12 months.

iv. Medium-voltage line, Pampa de los Guanacos to Sachayoj

Location: Departments of Copo and Alberdi

Description:

A 33-Kv transmission line with guard wire would be run between Pampa de los Guanacos and Sachayoj.

It would be about 51 km long and would parallel Provincial Route 6 through Coronel Manuel Rico in the Departments of Copo and Alberdi.

Low-voltage and public lighting systems would be built at Coronel Manuel Rico and Sachayoj, supplied through platform type transformer substations.

The 33-kv line would run from the Pampa de los Guanacos power plant. Foundations would be of plain concrete.

The project would be executed by the Ministry of Public Works (Power Division of Santiago del Estero). The work would take 12 months.

f. Establishment of irrigated areas on the Monte Quemado/Pampa de los Guanacos axis. Canal de Dios irrigation system

Background

This construction is part of the project for the release of government land in the Departments of Copo and Alberdi, executed by the Rural Settlement Bureau.

The first part of the project is in progress over 200 ha area already under cultivation, to experiment with various crops to find those best for the region and to serve as a training school in the management of irrigation areas for future settlers in the Ifia housing center.

Objectives

The objectives of the project are (1) to cooperate in the preparation of economic feasibility studies and designs for the establishment of ca. 1.300 ha on the Monte Quemado/Pampa de los Guanacos axis, and (2) to finance the necessary investment for completing the work.

Description

The areas were selected according to water supply capacity. The size of each, as shown below, determined the type of productions

<u>Town</u>	<u>Initial irrigated area (ha)</u>	<u>Production</u>
Urutaú	200	Horticulture (100%)
Ifia	800-1000	Horticulture (20%) Fruit-growing (20%) Field crops: soy beans, beans, wheat, corn (40%) Dairying (20%)
El Caburé	150	Horticulture and fruit growing
LLos Pirpintos	150	Horticulture (70%) Pasturage (30%)

The total area under irrigation to be supplied from the Canal de Dios is estimated at 1.500 ha. This area can be increased if irrigation efficiency is improved by using other systems (e.g. sprinklers) to reduce water consumption.

In addition to the undeniable dietary benefit to be gained if fresh vegetables are made available to an area which now has none, the project would generate about 180 new jobs.

Execution: The activities to be completed would include:

1. Preparation of feasibility study and final drawings
  - a) Survey of natural resources
  - b) Market analysis
  - c) Agro-ecological studies
2. Clearing and stump-pulling
3. Preparation of land
  - a) Plane surveying
  - b) Grading
4. Open cutting
5. Delivery gates
  - a) On canal
  - b) Secondary
6. Internal roads
7. Sewerage and doors

The project would be executed by the Ministry of Economic Affairs of the province through the Office of the Secretary for Agriculture. The work would take 18 months.

This project would be financed with the Bank's contribution.

g. Expansion of Los Pirpintos lumbering cooperative

Location: Department of Copo, Los Pirpintos, Belgrano railway.

Year founded: 1974

Activity: Production of raw materials, posts, sleepers, and charcoal.

Raw material supply: Exploitation of timber in Parque Chaqueño by lease of 10,000 ha government parcels in Copo.

Industrial investment: Sawmill with monthly capacity of 100,000 ft. of sawn lumber; artificial wood dryer and stabilizer, capacity 30 m<sup>3</sup>, yield 50,000 sq. feet a month. Investment ca. US\$60,000. In operation since August 1977.

In 1978 a processing plant and carpentry shop was opened with an investment of US\$45,000 for the machinery.

Three hundred seventy-five people are employed at this mill, in cutting, haulage of raw materials, haulage of materials to parking space, dryer maintenance, carpentry, product assembly, maintenance, administrative duties, and management.

In recent months the plant has been in use at 70% capacity for industrial and series production of doors and windows and school furniture; the raw material comes from the exploitation of hard and semi-hard wood in the forest in the zone of influence of the cooperative.

Objectives and purpose: The principal objective of the project is to expand the production capacity of the cooperative. This principal objective is reflected in the specific purpose of producing finished goods with more added value.

Description: The project includes plant and construction for the installation of new equipment and machinery, which can be installed as a result of the increase in power soon to be available.

The equipment, vehicles, and tools to be bought are all manufactured in Argentina. They include:

1. Loading equipment, consisting of two hydraulic cranes to load logs on trailers.
2. Equipment to haul logs from cutting site to plant. Two rigs are to be bought, each consisting of a 100 hp tractor and a 16 ton trailer.
3. Long-distance haulage equipment. A 40 ton tractor-trailer is to be bought.
4. Cutting equipment to fell and cut trees. Thirty half-held 7 hp power saws are to be bought.

The following construction is to be carried out.

1. Building of two 500 m<sup>2</sup> sheds, one for the flooring plant and the other for assembling and storing finished products.
2. Installation of two 15 m<sup>3</sup> dryers to dry and stabilize wood for the manufacture of flooring. Includes construction of the room and purchase of a boiler with a steam generating capacity of 2000 kg/h.
3. Construction of a bank of 50 7-m fixed masonry kilns for charcoal production.

The project would be executed by the Ministry of Economic Affairs of the province through the Office of the Secretary for Forest Resources. Work would take six months.

The cost of labor has been included in the total cost in budgeting construction.

h. Settlement and development of the cattle industry in the north of the Province of Santiago del Estero

Location: Departments of Copo, Alberdi and Moreno.

Objective:

Since 1974, the Government of the Province of Santiago del Estero has been carrying out a colonization and cattle development program in public lands in the north of the province, with the aim of bringing into production unusual lands. As part of this plan the Government, in carrying out a settlement program of low income families in small farms with access to credit and technical assistance facilities.

The project under consideration would assist in the settlement of low income families from the area on 500 ha estates with an overall total of 20,000 has. The project would consist of the improvement of these areas for cattle raising and the construction of communal facilities for the development of the industry.

The project is the first phase of a program which would eventually incorporate 200,000 has and benefit approximately 400 families. It represents a significant part of the overall investment in basic infrastructure for the settlement of woodman and other low income persons.

The activities to be carried out with the Bank's contribution include the cleaning of approximately 800 has, the construction of watersheds, access roads, barbed-wire fences and other type fences and the installation of drinking troughs, as well as the construction and provision of equipment for a cattle fair, and an insemination center. A supervised credit program will be included for the small farmers of the area.

The Government will carry out complementary activities seen as the construction of corrals and dwellings as well as technical assistance activities. It will also bear the cost for the settlement of the remaining families during coming years.

Construction and installation would take place in the communities of El Caburé, Ahi Veremos, El Desierto, Arbol Blanco y Sachayoj.

The project will be implemented by the Ministry of Economics of the Province of Santiago del Estero. The execution period will be 24 months.

The Bank would finance the activities related to the cleaning and investments of the area. The Province would assume other costs.

i. Rural Health Program

Location: Department of Copo, Alberdi, and Moreno

Objectives:

To extend basic health services to communities in the north of the department.

Description:

The Province of Santiago del Estero has been carrying out an extensive rural health program in the communities of the north. The program includes the building of hospitals in the larger communities and rural medical posts and first-aid stations in smaller ones. This program is being carried out with the support of the National Ministry of Social Welfare, which is now making a survey of health conditions in the region. The program will include the expansion of existing hospitals, the building of houses for medical personnel, and the construction and equipment of six medical posts and two first-aid stations.

In addition to endemic diseases, Chagas' disease, brucellosis, and venereal disease, the region has a high cancer rate because of the high arsenic content of the ground water.

The program is being executed by the provincial Ministry of Social Welfare. It would be financed by the Province of Santiago del Estero.

j. Provincial Route 6

Location: Quimili-Otumpa-Sachayoj-Coronel Rico-Pampa de los Guanacos. This road, which is part of the provincial highway system, will link the lumbering districts in the north and the livestock-raising zone in the northeast of the province with roads in the national highway system (routes 16, 89, and 34), providing a final solution to permanent accessibility for all villages served by the road.

From Quimili to Pampa de los Guanacos the road is 181 km. long. The stabilized foundation has been built as far as Sachayoj, and from the 132 km. marker is being surfaced with double sealed blacktop. This work is to be finished in the next few months except for the stretch between

the 60 and 80 km markers, for which specifications are being prepared for bidding in December to complete the surfacing as far as Sachayoj. From Sachayoj, the stretch to Coronel Rico is in execution, with the basic work, the stabilized foundation, and the double sealed blacktop to be finished under contract in July 1979 (this stretch is between the 132 km and 161 km markers).

The provincial road council is making the studies for preparation of specifications for bidding in the next few months on the missing stretch, that is, from Coronel Rico to Pampa de los Guanacos, for work similar to that already completed.

This project would be financed by the Province of Santiago del Estero.

## 6. Execution

The subproject would be executed by (1) FONAVI, through the Provincial Institute of Housing and Urban Development, and (2) the Government of the Province of Santiago del Estero, through the Ministry of Economic Affairs.

For the projects of (a) training, (b) cooperative and community development, (c) house renovation, (d) and water supply, FONAVI would channel the funds to the Provincial Housing and Urban Development Institute of Santiago del Estero. For this purpose, the Executive Power of Santiago del Estero has authorized the Institute to take responsibility under Decree D No. 3584/78.

For the projects of (f) irrigation and (g) expansion of the Los Pirpintos lumbering cooperative, and (h) livestock colonization, the funds would be channeled direct to the government of Santiago del Estero.

In the execution of projects under its responsibility, the Provincial Institute of Housing and Urban Development would be governed by the rules established by the Office of the Secretary for Urban Development and Housing with FONAVI. The Institute would use the following procedures to execute the works:

- Execution by administration or by direct contract
- Execution by agreement with other provincial organizations

The first procedure would be used for housing renovation and improvement, the second for the other subprojects.

In the execution of the projects under its responsibility, the provincial government would channel funds to the Ministry of Economic Affairs of the province, which would allocate them to the appropriate authorities. The project would be completed in 24 months.

## 7. Costs and Financing

The total cost of the project is the equivalent of US\$10 million, of which the Bank would contribute up to the equivalent of US\$4.8 million and the rest would be contributed by the province of Santiago del Estero as follows, based on July 1978 prices:

	<u>IDB</u>	<u>GSE</u>	<u>TOTAL</u>
I. Training of human resources	50.000	-	50.000
II. Support cooperative development	50.000	-	50.000
III. Housing rehabilitation	562.000	-	562.000
IV. Water supply	1.301.000		1.301.000
V. Energy	-	2.155.000	2.155.000
VI. Irrigation	528.000	112.000	640.000
VII. Expansion Forestry Cooperative	400.000	-	400.000
VIII. Cattle colonization	1.600.000	2.100.000	3.700.000
IX. Hospital improvement and health services		63.000	63.000
X. Provincial highway		770.000	770.000
XI. Contingencies	309.000	-	309.000
Total	4.800.000	5.200.000	10.000.000

#### 8. Justification of subproject

The subproject in the province of Santiago del Estero is justified as follows:

- (a) It is in compliance with national and provincial development policies, with a high priority assigned by the Argentine government.
- (b) It is part of an integrated development program for the area, and is in line with general development policies for the departments concerned.

- (c) It is designed entirely to benefit the lowest-income sectors of the Argentine population. Maximum family income in the area is about US\$50 a month.
- (d) It would make it possible to settle a population which so far has lived very precariously and has often had to emigrate or become migrant workers in other part of Argentina.
- (e) The basic infrastructure to be executed in the area would benefit ca. 30,000 persons.
- (f) The subproject would benefit 13,000 persons in regard to the provision of services to communities in the area.
- (g) In productive terms, it would generate permanent employment which would directly benefit at least 9,000 persons.
- (h) In terms of construction, it would generate an estimated 500 temporary jobs.
- (i) It would also train a large part of the population of the area in productive work. These benefits would extend not only to heads of households but to entire families, since training would emphasize the incorporation of the entire family unit in the productive process.
- (j) In regard to housing, the subproject would benefit 1.500 persons through the renovation and improvement of ca. 320 houses.
- (k) In regard to health, it would benefit the population of the area by supplying drinking water without a high arsenic content.
- (l) The supply of electric power to the area would make it possible to expand the capacity of existing productive activities and permit the establishment of new facilities in the area, such as a flooring production plant and packing plants to be built in later stages of the subproject.
- (m) The best technologies would be used to solve such local problems as (1) the mechanization of local labor in the execution of infrastructure construction and the improvement of housing, and (2) the minimization of the use of construction machinery and equipment that would replace manual labor.
- (n) An appropriate urban organization would be achieved in the area and an appropriate landholding system would be established.

UBICACION DE LA PROVINCIA EN EL PAIS





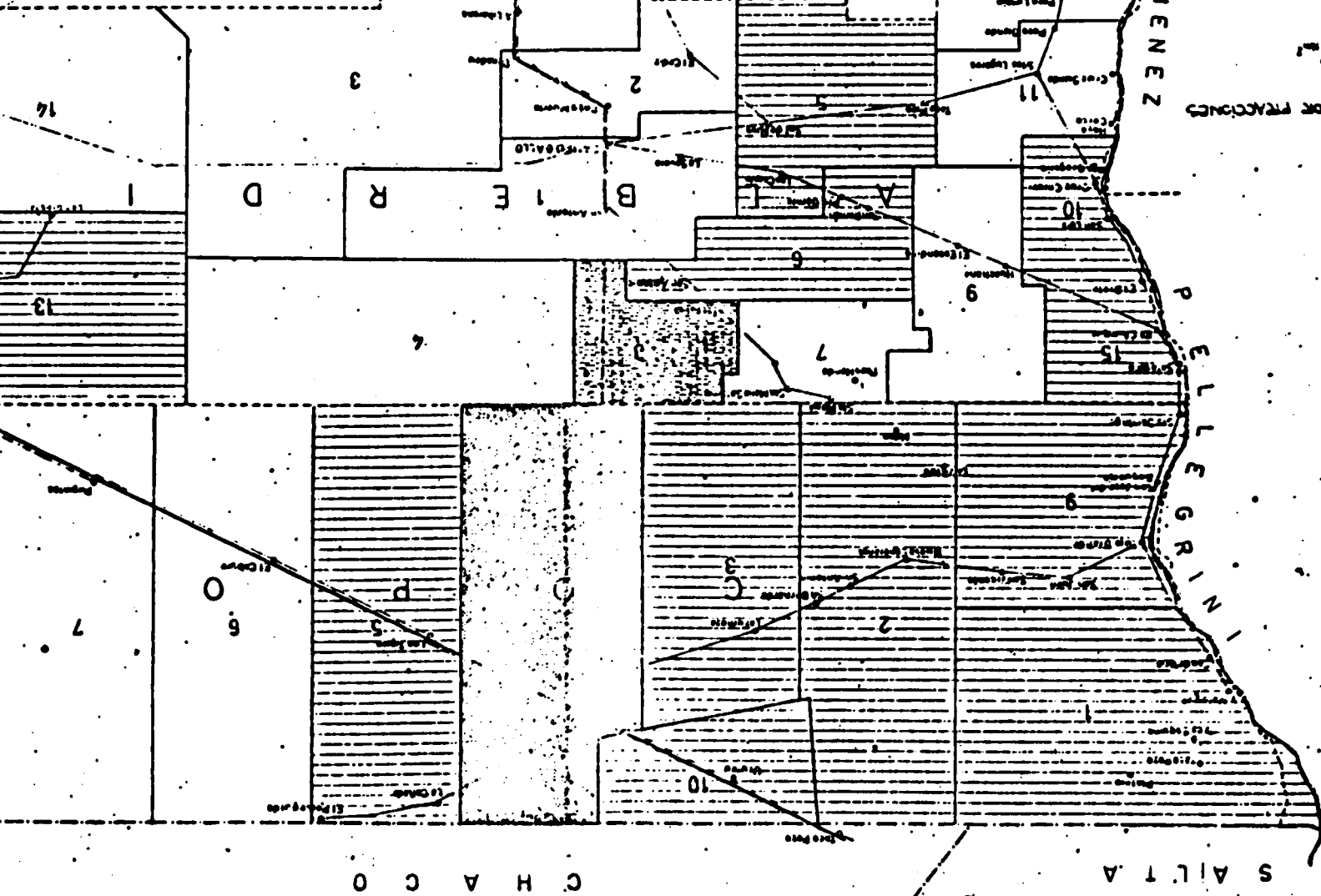
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0 POR FRACCIONES



C. SUBPROJECT FOR COMMUNITY DEVELOPMENT IN AN AREA ADJACENT TO THE CITY OF LA RIOJA

1. INTRODUCTION

The application was submitted by the Office for the Secretary of State for Housing and City Planning to the special mission that visited the country in September 1978.

The project consists in partial financing of the urban renewal of the area of Alta Rioja in the city of La Rioja, the capital of the province of the same name. Basically, the objective is to provide an area of approximately 35 ha. with facilities. Independently of this project but currently with it, a number of existing houses will be repaired and new houses for low income families constructed.

The Instituto Provincial de la Vivienda Urbanismo will be responsible for executing the project.

The area selected, the Alta Rioja area adjacent to the capital, was selected by the Office of the Secretary for Housing and City Planning because of the high marginality in the area, the living and health conditions of the population there, and the fact that there is already a program aimed at improving conditions in the area.

The project would benefit approximately 1,000 families.

The contribution of the Bank to the subproject is estimated at the equivalent of US\$3.2 million in Argentine pesos.

2. PROVINCIAL FRAME OF REFERENCE

The economy of the province might be described as an oasis economy, and there is also a small and incipient mining industry. Indeed, since water is the most critical resource, the economy and the population is located where access to water, either ground water or well water, is possible. Accordingly, they are preferably located in the mountain valleys and saddles of the many mountain chains in the province, which to some extent delimit the regions within it. The Los Llanos region in the south is to be left out of account, because of the felling of the forests and consequently the introduction of livestock raising.

This oasis economy, which consists primarily of the small scale production of grapes and fruits and which is organized on the basis of smallholdings, has been seriously affected by the transformation of the economic structure of the country as a whole, with the resulting disappearance of interdependence and complementarity of the various provinces and their economic areas.

This deterioration has been accelerated in recent years, and its most evident manifestation is rural/urban migration and gradual depopulation.

This migration is the consequence of a lack of employment opportunities in the rural sectors and the lack of access of both the marginal urban population and the rural sectors to basic social services.

Accordingly, the impact the project would have overall on the city is clear.

The subproject involves the rehabilitation of a large area that is the natural extension of the city and the provision of services and facilities to a population of approximately 300 families that are marginalized, both ecologically and socially. The purpose of the project is to eliminate the urban barriers that are a reflection of the above-mentioned marginality and to arrest the deterioration of the area through infrastructure works. Access to facilities and services would considerably improve the quality of life of the population and at the same time would strengthen the activities of the municipality through the betterment and reclamation of land belonging to the municipality of the city of La Rioja. The scope of the impact must take into account the fact that this area contains virtually all the marginal population of the city, which is approximately 30% of the total population of the province.

### 3. THE ALTA RIOJA AREA

#### a. Location

The Alta Rioja area is a continuation of the central area of the city and is separated from it by the Tajamar river. It is connected to the city by means of a bridge and two precarious walkways that cross the Tajamar river.

The inhabitants of the area are predominantly natives of the province. They have not defined occupations and consist of day laborers and low level public employees. The child population is large. There are 800 children aged 1-12 years.

#### b. Services

Although the cables of electric networks pass through the area, most of the houses do not have electricity service.

Water supply consists of public standpipes at a distance from the houses and this makes it necessary for the inhabitants of the more populous sectors to line up with buckets to obtain water and in the

less populous sectors, the people connect a hose which they run to their houses to fill up containers when it is their turn and then the hose is passed on to another inhabitant.

Waste water is for the most part thrown out on the land.

Improvised latrines consist of a small pit, but in a few cases there are well-constructed cesspits.

With the exception of two or three streets in an area which was intended to be a subdivision, the streets are not laid out. Some houses do not have any access path and access to them is by walking through other houses. Some of them are located on the banks of creeks and at high water are flooded and isolated.

There is a school, which could accommodate some of the children of the area which is in a barely adequate state. There is a new school building which has not yet been opened. It is located on the western boundary of this project; it could accommodate part of the students from Alta Rioja.

There is no first-aid room, telephones, personal services or public transportation.

There are no grocery stores and, to replace them, small kiosks selling all kinds of goods have been set up in makeshift premises which do not meet minimum hygiene conditions.

#### C. General aspects

The following table, which is based on data from the most recent National Population Census (1970) shows the state of housing in the province, the capital city and the project area:

	<u>Province</u>	<u>City</u>	<u>Project</u>
No. of inhabitants	136.665	40.836	2.740
No. of dwellings	30.823	8.185	538
Inhabitants per dwelling	4.43	4.99	5.09
Dwellings to be preserved	7.751	5.588	0
Percentage of dwellings to be preserved	25.1	68.3	0
Dwellings to be improved	3.355	1.633	100
Percentage of dwellings to be improved	10.9	19.9	18.6
Dwellings to be replaced	15.651	1.759	438
Percentage of dwellings to be replaced	50.8	21.4	81.4
Total percentages of dwellings to be improved and replaced	61.7	41.3	100.0

This means that in the city of La Rioja the project to be financed will help solve the most pressing housing problems and will help meet 29.6% of requirements for improvement and replacement of dwellings in the capital (1,000/1633 + 1749).

d. Monthly family income levels

The following table, which is based on the survey of the population applying for housing, shows the economic status of the province, the capital city and the project area:

<u>Income Level</u>	<u>Province</u>		<u>City</u>		<u>Project</u>	
	<u>%</u>	<u>% Ac.</u>	<u>%</u>	<u>% Ac.</u>	<u>%</u>	<u>% Ac.</u>
Under \$20,000 (US\$25)	4	4	4	4	5	5
\$20,001 - \$50,000 (US\$25-62.5)	19	23	46	50	52	57
\$50,001 - \$100,000 (US\$62.5-125)	49	72	26	76	40	97
\$100,001-150,000 (US\$125-187.5)	21	93	16	92	2	99
\$150,001-200,000 (US\$187.5-250)	5	98	4	96	1	100
More than \$200,000 (US\$250)	2	100	4	100	-	100

4. OBJECTIVE

The objective of the project is to regularize and improve physical, environmental and social conditions in the Alta Rioja area, which is at present an obstacle to the implementation of the current master plan.

## 5. DESCRIPTION

The area consists of works connecting the area with the rest of the city of La Rioja, or urban infrastructure works in the Alta Rioja area, the construction and rehabilitation of housing in the area.

- i) Urban connection works under the responsibility of the Province of La Rioja.
- ii) Works for the development and infrastructure of Sector R3 (with recoverable dwellings) (20 ha) with the financing of the Bank.
- iii) Infrastructure works in Sector R1 (15 ha), with the financing of the Bank.
- iv) The construction of housing with financing from FONAVI.

The works to be undertaken include:

- i) Paving and treatment of the Tajamar River.
- ii) Construction of bridges over the Tajamar so as to continue streets and link Alta Rioja with the center of the city.
- iii) Draw up urbanization plans for Alta Rioja so that it follows the street layout of the rest of the city.
- iv) Extend the electricity, water and sewer networks to the dwellings to be constructed, taking into account possible natural gas connections.
- v) Provide a civic center for the area with community facilities such as plaza, schools, chapel, first aid center, etc.
- vi) Construction and reconditioning of houses.

## 6. DESIGNS

So far, only preliminary sketches are available but in view of the simplicity of the works to be executed, it is believed that they could be completed within a minimum period of six months. Agreements have been reached with the authorities concerned that, in accordance with the guidelines of the master plan, the design will be of middle/high density, minimizing the use of roads for vehicles and maximizing the use of pedestrian facilities. It is estimated that 50% of the lots will have an area of 200 m<sup>2</sup> and the remaining 50%, an area varying from 300 to 350 m<sup>2</sup>.

## 7. EXECUTION

- a. The subproject would be executed by the National Housing Fund through the Provincial Housing and City Planning Institute of the Province of La Rioja, which for that purpose would use its normal and habitual procedures. Appendix No. 4 contains a detailed schedule for the execution of the works, which would cover a period of one year from the date on which the final designs were ready.

- b. FONAVI would undertake to build on the lots serviced by this project, houses whose costs would be compatible with the income levels of the proposed beneficiaries.

These dwellings will comprise: i) complete and finished dwellings; ii) semi-finished dwellings; iii) basic core. In no case would the amortization and interest payments exceed 25% of the family income.

- c. The lots would be donated by the Intendencia Municipal, which in its letter dated April 7, 1978 undertook to make this transfer.
- d. Executing agencies. Appendix No. 5 details the responsibilities of the various entities in the execution and maintenance of the works.
- e. Water and sewer rates in Argentina, the installation of water meters has recently begun and priority would be given to the installation of such meters.

Specifically, there are no meters in La Rioja, and single family dwellings pay \$50.000 (US\$62.50) for a domiciliary connection plus a semi-monthly fixed rate of \$3.140 (US\$3.92).

- f. Availability of water and local drains. The formal commitment of the Empresa Obras Sanitarias de la Nacion is required for water supply and particularly for the construction of sewers.
- g. Agreement has been reached with the authorities to emphasize labor intensive activities, for which purpose the following are planned:
- Participation of neighborhood groups already established
  - Organization of new groups
  - Previous training of unskilled labor, for which the provincial community promotion institutions would be responsible.

It has been planned to dig ditches for water and sewer lines, to pave the streets with handmade concrete blocks using an existing cooperative and promoting the establishment of others.

- h. Incentives for the generation of permanent employment. At present the city has an industrial park whose infrastructure is complete with the exception of gaslines but it is planned to install them in 1979.

A national law is being prepared and would grant special incentives to La Rioja, since the other provinces of the country already receive provincial incentives.

To date there are 8 industrial enterprises located in the industrial estate employing 89 permanent employees. Four other industries are in the process of locating there and are expected to generate 200 permanent jobs.

#### 8. COST AND FINANCING

The total cost of the project would be US\$4.7 million broken down as follows:

<u>Item</u>	<u>Bank</u>	<u>US\$million Counterpart</u>	<u>Total</u>
a) Urban connection works	-	1.5	1.5
b) Development works - infrastructure in area R3	1.2	-	1.2
c) Infrastructure works in area R1	2.0	-	2.0
d) Construction and Rehabilitation of housing	-	10.0	10.0
<b>TOTAL</b>	<u>3.2</u>	<u>11.5</u>	<u>14.7</u>

FONAVI would undertake to finance the construction of no less than 1,000 dwellings at an estimated cost equivalent to US\$10 million. At least 300 of these houses would be earmarked for families. The other dwellings would be for other areas of La Rioja.

The Argentine authorities would be responsible for assuming any additional costs that might arise during the execution of the project.

#### 9. JUSTIFICATION OF THE SUBPROJECT

The La Rioja subproject is justified for the following reasons:

1. It conforms to national and provincial development policies and the Government of Argentina assigns high priority to it.
2. The subproject is part of the program for the development of the city of La Rioja; it is properly coordinated with it and conforms to the general development policies of the area.
3. The project is entirely intended to benefit the low income sectors of the population. The highest family income is \$80 monthly and the average income is approximately US\$50. Therefore, the extension of public services, such as electricity and water, to the population of the area is justified.
4. Through the construction of the basic infrastructure for the area the subproject will directly benefit an estimated population of 5,000 persons.

5. During its execution the subproject will generate approximately 500 jobs.
6. During the execution it is planned to use the most appropriate technologies for solving the problems of the area such as: a) the mechanization of the use of local manpower in executing infrastructure works and in the construction by FONAVI of dwellings; b) least possible use of construction machinery and equipment displacing manpower.
7. Improvement of environmental health conditions through supplementary works to be carried out by the city such as the cleaning of the Tajamar river.
8. Appropriate urban development will be achieved and will facilitate the legalization of land ownership in the area.

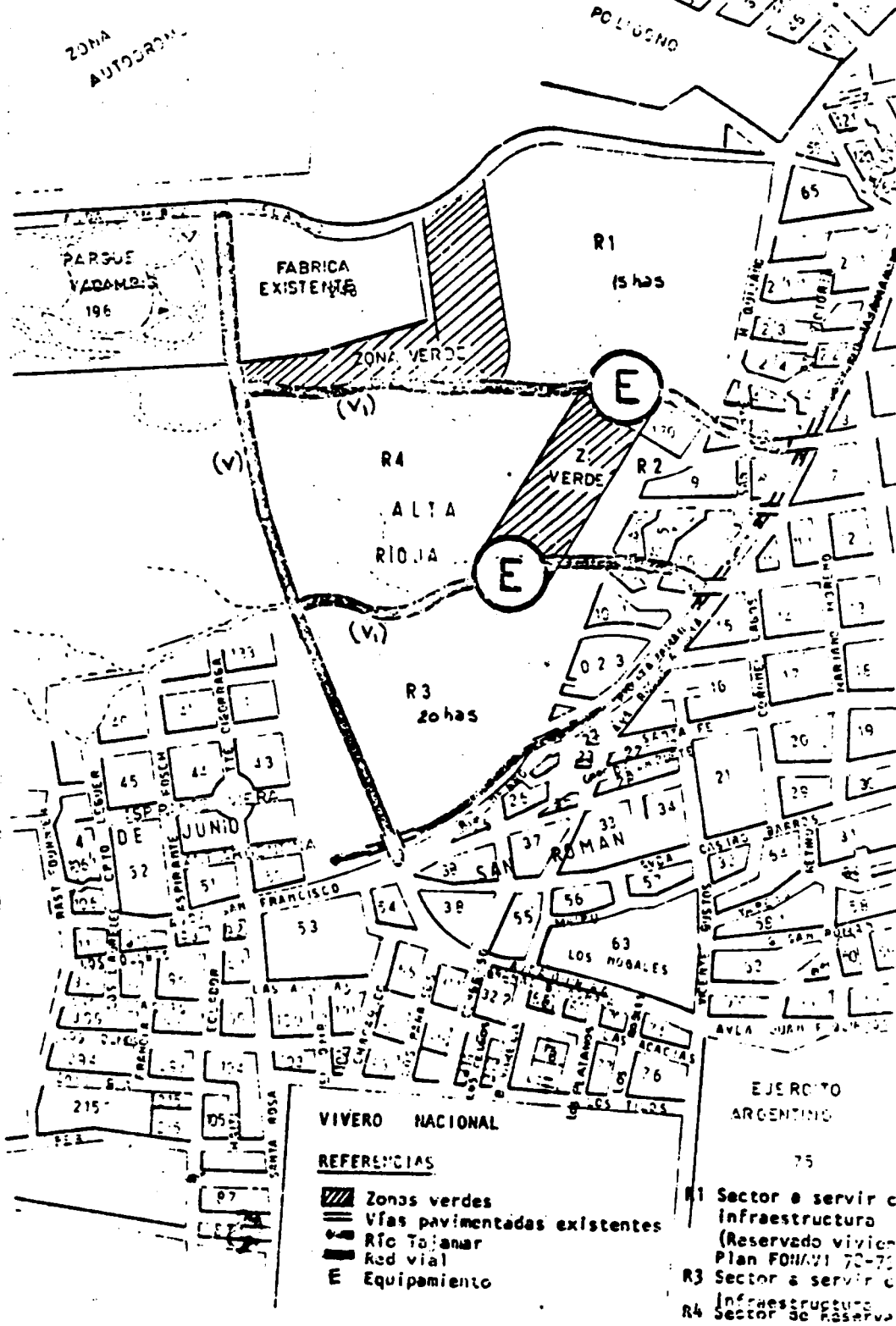
**BUDGET FOR THE PROVISION OF INFRASTRUCTURE AND FACILITIES  
TO BE FINANCED IN ALTA RIOJA**

	<u>Bank</u>	<u>Counterpart</u>	<u>Total</u>
<b>A. URBAN CONNECTION WORKS FOR THE ENTIRE AREA</b>			
1) Paving and treatment Tajamar river	-	750.000	750.000
2) Construction of three bridges and repair of one	-	750.000	750.000
Subtotal	<u>-</u>	<u>1.500.000</u>	<u>1.500.000</u>
<b>B. LAND DEVELOPMENT AND INFRASTRUCTURE WORKS OF SECTOR R3 (20 ha)</b>			
1) Layout of streets and blocks	120.000	-	120.000
2) Electric network domicillary and lighting with two transformer stations	157.000	-	157.000
3) Sewer mains network	90.000	-	90.000
4) Water mains network	50.000	-	50.000
5) Paving of roads	173.000	-	173.000
6) Community facilities	610.000	-	610.000
Subtotal	<u>1.200.000</u>	-	<u>1.200.000</u>
<b>C. INFRASTRUCTURE WORKS IN SECTOR R1 (15 ha)</b>			
1) Layout of streets and blocks	90.000	-	90.000
2) Electricity network domicillary and lighting	118.000	-	118.000
3) Sewer mains network	57.000	-	57.000
4) Water mains network	50.000	-	50.000
5) Paving of roads	126.000	-	126.000
6) Community facilities	1.559.000	-	1.559.000
Subtotal	<u>2.000.000</u>	-	<u>2.000.000</u>
<b>D. HOUSING</b>		<u>10.000.000</u>	<u>10.000.000</u>
<b>TOTAL</b>	<u>3.200.000</u>	<u>11.500.000</u>	<u>14.700.000</u>



# URBANA ZONA ALTA RIOJA

Appendix 1



VIVERO NACIONAL

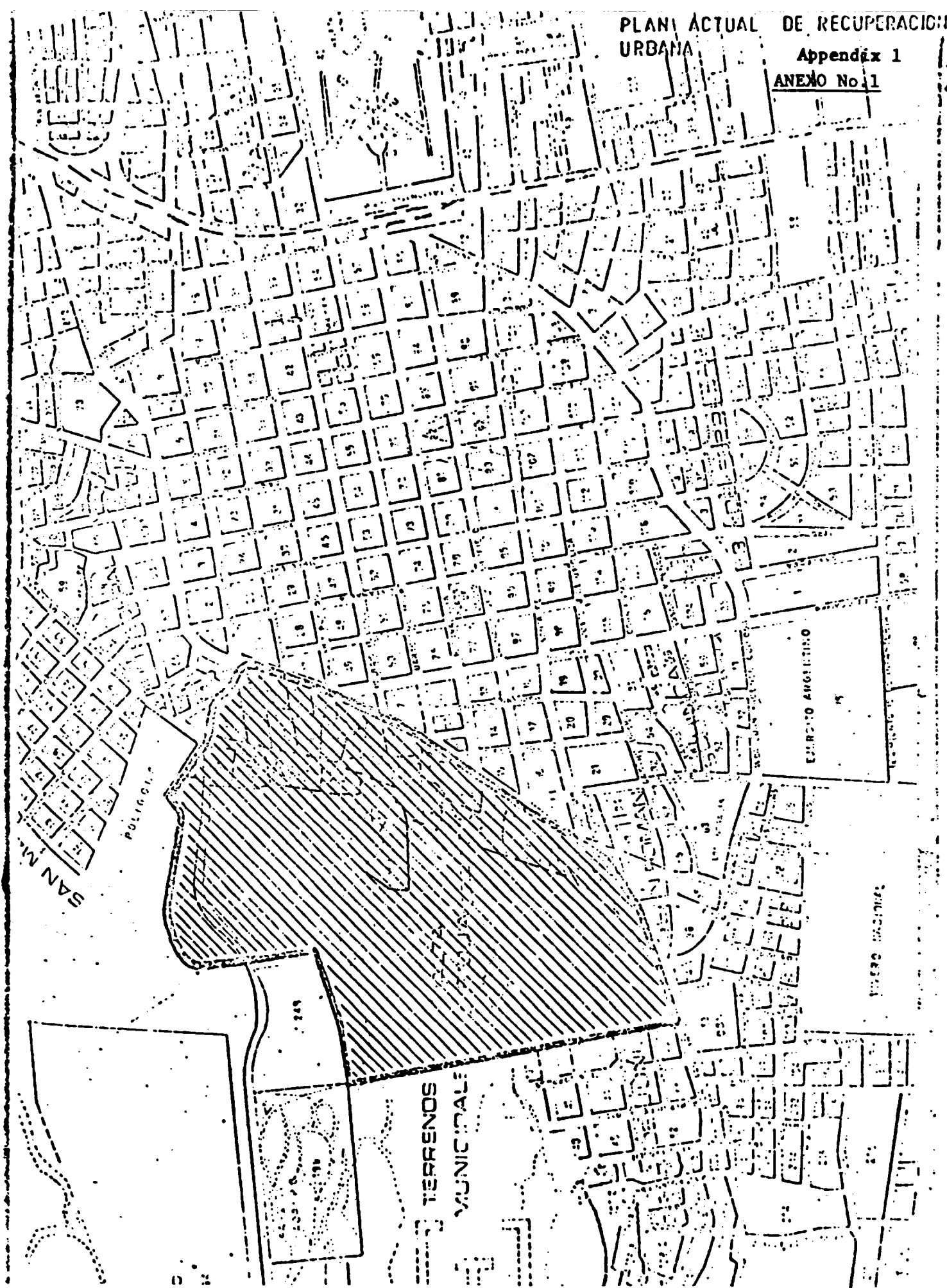
## REFERENCIAS

- ▨ Zonas verdes
- Vías pavimentadas existentes
- Río Tojanar
- Red vial
- E Equipamiento

- R1 Sector a servir c/ Infraestructura (Reservado viviendas Plan FONAVI 70-71)
- R3 Sector a servir c/ Infraestructura
- R4 Sector de Reserva

PLANI ACTUAL DE RECUPERACION  
URBANA

Appendix 1  
ANEXO No. 1



INFECTIOUS ENDEMIC DISEASES PROJECT IN ARGENTINA**I** INTRODUCTION

This program consists in the control of three infectious diseases that are endemic in Argentina and are closely connected with the level of living of a large segment of the low-income population.

Since they affect areas that are important for the economic production of the country, these diseases are a burden on the economy of the country and are obstacles to the achievement of the economic and social development goals of the country.

These diseases include Chagas-Mazza Disease, which because of its seriousness, highly complex nature and large extension, profoundly affects the working capacity of a very large number of the poorest members of the population.

Argentine Hemorrhagic fever is endemic in a vast area of the Pampa Humeda, which is the most important agricultural area of the country. The disease occurs among migrant workers during the harvest season. Because of the progressive spread of this disease in recent years, it has been necessary to take measures to contain it.

The third infectious disease included in the program is leprosy, which affects a large number of Argentines. Effective treatment is available and all that is necessary for the total elimination of the disease from the country is the organization of a program and the necessary resources.

The total contribution of the Bank to the conduct of the activities described below would be \$7 million.

**II** CHAGAS-MAZZA DISEASE CONTROL PROGRAM**A.** Background

Chagas-Mazza disease is a communicable parasitic disease that is found only in the Americas.

The parasite (*Trypanosoma cruzi*) is transmitted by a triatomine which is called by different names in different countries (in Argentina it is called Vinchuca); it is found in the houses of the low-income population. The disease does not always cause a permanent lesions; however, meningoencephalitis and myocarditis lesions are irreversible. All age groups are susceptible, but the disease is more serious in young persons in which it frequently causes cardiac damage (myocarditis). The disease is widespread in Americas.

ESTIMATED OF HUMAN CHAGAS INFECTION IN THE REPUBLIC OF ARGENTINA

1975 - By Jurisdiction (1)

PERCENTAGE OF POPULATION INFECTED AND WITH CHAGASIC MYOCARDITIS

<u>Jurisdiction</u>	<u>No. In- habitants</u> (1)	<u>Percentage</u> (2)	<u>Infected Pob.</u> (3)
For the Republic	25,803,514		3,173,571
Federal	2,835,810	5.1	149,635
Buenos Aires	10,301,405	5.6	576,878
Cordoba	173,320	15.7	27,208
Entre Rios	2,312,837	35.7	825,670
Formosa	598,336	14.2	84,959
La Rioja	575,451	21.1	121,995
Misiones	225,677	1.9	4,286
Parana	869,149	10.9	94,623
Paraguay	272,906	15.4	42,027
Paraguay	343,920	13.7	47,936
Paraguay	172,374	15.9	27,396
Paraguay	138,570	23.7	32,825
Paraguay	1,082,383	19.6	201,308
Paraguay	505,269	11.3	57,068
Paraguay	194,676	2.3	4,476
Paraguay (4)	315,054	1.1	3,465
Paraguay	569,848	20.2	115,100
Paraguay	414,465	25.1	104,014
Paraguay	197,257	31.7	59,374
Paraguay	116,269	1.6	1,859
Paraguay (5)	2,275,630	6.3	143,363
Paraguay del Estero	523,365	42.7	223,449
Paraguay	777,587	28.8	223,920
Paraguay, Antartica and Islands of South Atlantic	17,364	3.8	657

Population projection of country at 1975 (census) N.P. Rivero Peñaloza and P.N. de Alderete

Weighted infection rates by Office of the Secretary for Public Health (1968)

Projection of infected population 1975 on the basis of weighted rates at 1968 (without adjustments)

(5) Underestimated rates because of small size of sample (Norte de S. Fe gave 47.4% infection rate)

Patients with cardiac involvement were estimated at 20% of the infected population.

It is believed that in Bolivia at least 700,000 persons are infected; in Brazil, possibly 3 to 4 million; in Chile, more than 300,000 of whom 10 to 20% have cardiac lesions; in Colombia, 10 to 20% of the population are infected; in Paraguay, a significant proportion of the population has been found to be infected; in Uruguay the number of persons infected is estimated at 800,000; in Venezuela, out of a total of 1,200,000 persons infected, 22% have cardiac manifestations; in Panama and Central America the infection is apparently less frequent but is known to exist in many towns in the rural areas.

In Argentina, it is estimated, on the basis of data weighted by surveys made in 1975 in various provinces, that the number of persons infected amounts to 3.5 million, of whom 20% have various degrees of cardiac damage. Table No. 1 shows the percentage of the population infected and those with Chagasic myocarditis in the country, distributed by province. In the economically active population, aged 20-50 years, Chagasic cardiac damage ranges between 25 and 30%. Studies made in the blood therapy center, blood banks and among voluntary donors, show a positivity rate ranging from 6.5 to 37%. The mortality rate is estimated at 8%, of which 15% is due to sudden death and 50% to cardiac insufficiency.

The constant internal and external migration, which is inadequately controlled, favors the spread of the vector and of the reservoirs (36% of the Bolivian population which come each year to work in the harvest in northern Argentina have a positive serology i.e. have been infected sometime during their life).

The characteristics of housing, especially that of the low-income population, aggravates the problem, since not only vectores but animals that are reservoirs of the parasites are found in such housing.

The Chagas-Mazza Disease Control Program comprise two subprograms: (1) for control of human health, and (2) for control of triatomines through the sanitary conditioning of housing.

## **B. Human Health Subproject**

### **1. General objectives**

- a. To detect persons infected with this disease and to provide the corresponding treatment and control.
- b. To standardize simple low-cost diagnostic techniques common to Argentina, Bolivia and Paraguay.
- c. To carry out serological surveys and to determine cardiovascular lesions in order to obtain ongoing information on the extent of the disease.

- d. To study and to suggest common measures that could be used in the migratory movements between Argentina, Bolivia and Paraguay in order to prevent the transmission of triatomines that are carriers of the disease and to control infected persons.
- e. To prepare specific programs for the control and sanitation of housing and work places in rural areas and in the shanty towns in large cities.

2. Specific objectives

- a. To detect persons suffering from Chagas disease in selected communities and to provide them with appropriate guidance, treatment and control.
- b. To identify the medical and socioeconomic variables of the population affected in three regions of the country and in the republics of Bolivia and Paraguay.
- c. To identify the entomological characteristics of the triatomines in the regions selected in order to determine the infection rate and the relationship of the species to housing.
- d. To carry out a campaign for the information and education of the population in the most infected areas both in Argentina and in Bolivia and Paraguay and possibly in a Central American country.

3. Project description

Activities to be undertaken

Activities to detect and determine the following aspects will be carried in the affected population:

- 1. Serological aspects of the disease.
- 2. Cardiological problems.
- 3. Clinical aspects.
- 4. Entomological aspects.
- 5. Analysis of the socioeconomic variables of persons infected with Chagas' disease in the northeastern, northwestern and central regions of Argentina and in selected areas of Bolivia and Paraguay.
- 6. To carry out this program it will be necessary to train

the personnel required in the following fields:

	<u>Argentina</u>	<u>Bolivia</u>	<u>Paraguay</u>	<u>Other Countries</u>	<u>Total</u>
Cardiologists	19	6	6	5	36
Clinicians and					
Pediatricians	20	6	6	16	48
Biochemists	20	3	3	10	36
Entomologists					
and Biologists	20	4	4	12	40
Total	79	19	19	43	160

An in-service training course will take place in Central America possibly in Costa Rica, in order to train professionals from Central and South America with the purpose of identifying and treating the local varieties of the disease.

#### 4. Operating structure

##### Execution of the Program

This program will be executed by the Universidad del Salvador of Buenos Aires, through the Instituto para el Estudio de la Ciencia Latinoamericana (ECLA) using various institutions in Argentina, Bolivia and Paraguay.

##### Description of the executing agency

ECLA was established in 1970 as an institution under the authority of the Office of the Rector of the Universidad del Salvador of Buenos Aires. Its principal objectives are as follows:

- a. To investigate the status of the scientific-technological systems of Argentina and of Latin America and their interrelations with the corresponding productive, social and cultural systems.
- b. To train technical personnel to carry out research on the problems mentioned in (a) and to encourage the establishment of work teams for the planning of science and technology for the development of Argentina and of Latin America.
- c. To undertake interdisciplinary training for specialized personnel.
- d. To provide technical assistance in the area of policy, planning, and administration of science and technology.

ECLA has carried out and is carrying out various types of research and conducting courses both in Argentina and in other Latin American countries.

### Continuity of the Project

The project will be continued indefinitely through epidemiological surveillance, control and treatment of patients, by local agencies under the authority of the Office of the Secretary of State for Public Health.

## 5. Justification

### Short Description of the Sector

The health sector is divided into a public subsector, which covers approximately 75% of the population, and a private subsector, which covers 25% of the population.

Chagas-Mazza disease is controlled primarily through the Office of the Secretary of State for Public Health of the Ministry of Social Welfare. ECLA, which is a unit of the Universidad del Salvador, carries out laboratory and field research and conducts training courses on the subject.

In recent years the Office of the Secretary has assigned the following amounts through the National Program for the Control of Chagas-Mazza Disease: \$M/N210,900,000 in 1976; in 1977 \$M/N4,438,800,000; and in 1978 \$M/N13,170,000,000; which, in accordance with the exchange rate in each of those years, amounts to US\$780,000 in 1976, US\$11,100,000 in 1977 and US\$16,500,000 in 1978.

### Impact on the Solution of the Problem

The purpose of the program is not only to obtain an overall knowledge of the problems in order to control the disease in the developing countries but also to ascertain the importance of socio-economic factors in its spread. It is also hoped to obtain a better knowledge in the incidence and prevalence of the disease and to limit its spread and the damage it causes.

The disease primarily affects the low-income population that live in dwellings whose substandard conditions favor the entry of triatomines.

Table No. 2 shows the socio-economic characteristics of the population of the provinces most affected and their significant difference with the country as a whole and with the province of Buenos Aires.

SOCIO-ECONOMIC INDICATORS OF THE NORTHEASTERN AND NORTHWESTERN-CENTRAL REGIONS AND  
THEIR RELATIONSHIP TO THE PROVINCE OF BUENOS AIRES AND TOTAL OF THE COUNTRY

	Per capita GDP 1969 (in pesos)	Year 1969 PEG Populat. Economically Active		Migra- tory balance 1965-70	Child mortali- rate per 1,000 1970	Medical Care		% final primary school retent'n final ret. 1963-1969	Ill tera
		Prim. Sector (agricul- ture, mining & quarrying)	Manufac- turing Electri. Gas&Water			Popu- la./ phisi- cian ratio	Bed/ 1,000 pop.		
Country	2,789	6.8	12.4	-	63.1	504	6.2	45.0	8.
Buenos Aires	2,901	14.5	12.3	469,750	55.4	705	5.0	60.6	4.
Entre Rios	1,027	2.7	2.3	12,950	73.6	1,182	4.4	32.0	13.
Corrientes	1,420	3.0	3.7	6,400	132.6	1,285	8.6	26.5	15.
Chaco	1,092	1.9	3.5	7,500	83.6	1,097	5.0	39.7	11.
Chubut	1,704	4.3	10.9	9,600	114.4	1,156	6.2	28.2	16.
Comodoro Rivadavia	1,816	2.3	3.1	68,100	52.2	1,911	3.8	22.0	23.
Formosa	1,553	4.5	9.2	64,950	78.6	1,362	4.3	19.8	25.
La Pampa	1,439	2.6	9.0	96,650	100.1	1,635	4.2	20.3	23.
Misiones	1,068	2.2	3.4	14,300	62.5	1,890	2.7	22.7	18.
Parana	1,265	1.9	6.9	26,350	77.7	1,803	2.7	21.7	9.

Vital statistics -- Office of the Secretary of State for Public Health, National Development Plan

Proposed Technology

In view of our present knowledge of the disease it is the most rational and scientific method of carrying out an organized campaign with multiplier effects.

6. Cost of FinancingCost

The total cost of the program is estimated at US\$3,750,000, to be disbursed over a period of three years. The IDB share would be US\$3 million in accordance with the breakdown shown in Table No. 3.

Table No. 3IDB Contribution

<u>Item</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Total</u>
Detection of serological, clinical, cardiological and entomological aspects of the disease	196,280	183,080	75,320	454,680
Detection of socio-economic variables and health control in Bolivia, Paraguay and Costa Rica	22,300	141,150	261,350	424,800
Detection of socio-economic variables and health control in the Argentine Republic	24,300	258,900	110,850	394,050
Equipment	444,100	342,800	-	786,900
Fellowships	-	42,880	42,880	85,760
Subtotal	686,980	968,810	490,400	2,146,190
Escalation	171,745	242,202	122,600	536,547
Administrative expenses	96,177	135,633	85,453	317,263
Total	954,902	1,283,645	698,453	3,000,000

The national funds directly related to the program will be US\$750,000. These would be the investments of ECLA. In addition to these amounts the Office of the Secretary of State for Public Health would continue to spend approximately US\$13 million in the control of the disease throughout the country.

## 7. Evaluation

An annual evaluation will be made, showing the number of activities carried out on each aspect of the program; the findings of the surveys, giving the number and percentage of positivity and miocardiac complication and the conduct of campaigns for the education of the population and courses for the training of technical personnel of other countries and of national personnel.

## C. Subproject for the Sanitation of Housing

### 1. Definition and Objectives

The purpose of the project is to carry out a demonstration program on the reconditioning of housing, covering 4,500 families in the provinces of La Rioja and Catamarca in the following departments: in La Rioja, General Belgrano, General Ocampo, General Quiroga and General Peñaloza; and in Catamarca, in the Departments of La Paz, Ancosti, Tapallan and El Alto. The beneficiaries of this activity would be low-income persons. The provinces concerned are among those with the lowest income in Argentina and the departments concerned are among the most underprivileged.

The population is exclusively rural and is grouped in small communities.

In the departments concerned in the province of La Rioja there are approximately 5,800 houses of which it is believed that approximately 2,400 can be reconditioned. In the departments of the province of Catamarca there are approximately 7,000 houses of which about 2,100 could be reconditioned. 1/

### 2. Description of Activities

For the purposes of the sanitation of the houses in the areas selected, the parts of the dwellings that affect the proliferation of the Chagas-disease vector will be replaced. Rehabilitation will involve the following improvements:

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1/ Appendix 2 includes details of the departments selected.

- a) Roofs: Replacement of defective roofs by roof coverings in good sanitary condition and improvement of existing roofs.
- b) Walls: Repair of unsanitary walls with suitable materials.
- c) Floors: Replacement of earth floors by smooth concrete paving over subfloor.
- d) Sanitary Installations: Improvement and/or sanitary additions including in-house water supply and sanitary disposal of excreta.
- e) Peridomiciliary Area: Improvement of conditions in peridomiciliary areas, including clean-up and removal of chicken coops, animal pens, etc. On the basis of the results of the mission, the cost of reconditioning a typical 30 m2 house was estimated as follows:

	<u>US\$</u>
Roof	220
Floors	70
Walls (doors, windows)	250
Latrines	110
Peridomiciliary area	<u>70</u>
	<u>720</u>

In carrying out the improvements mentioned in the foregoing paragraph, self-help would be emphasized, as would be the support of the existing agricultural cooperatives in the area. To ensure maximum use of local manpower and at the same time to use the campaign as a means of providing the population of the area with productive skills, training programs would be carried out in the following fields:

- a) Organization of community for the execution of works for the improvement of housing by means of self held and mutual aid systems.
- b) Mastery of construction methods for use in rural areas, using local materials that are suitable from the health point of view.
- c) Knowledge of basic health education for use in the maintenance of housing and peridomiciliary areas and protection against infestation.

### 3. Execution

#### A. Program of Activities

The following activities will be carried out to execute the subproject:

1. Studies on the data on housing in the area obtained from the periodical censuses made by the authorities of the Provincial Chagas Disease Control Campaigns and such additional surveys as prove necessary.
2. Technical analysis of the information for the purpose of determining: (i) the specific improvements to be carried out; (ii) selection of materials and methods; (iii) cost estimates; and (iv) community contributions.
3. Financial analysis of the beneficiaries to determine type of financing and/or subsidies to be used.
4. Promotion and dissemination activities to be carried out jointly in the area with the staff of the National Chagas Disease Control Campaign whose activities were described above.
5. In-service training of local personnel to be used in the construction works.
6. Execution of construction works. 1/

#### B. Executing Agencies

1. At the national level. The National Sanitation Directorate of the Office of the Secretary of State for Public Health, a unit of the Ministry of Social Welfare of the Nation, will be responsible for the conduct, administration and the general supervision of the subproject. This National Directorate has ministerial authority as regards promotion, planning and supervision of programs and projects of water supply, sewage disposal and any other sanitary services connected with small rural communities. Furthermore, it is the national agency responsible for all aspects connected with the environment and health.

The subproject will be headed by a sanitary engineer from the agency responsible, which will have three support areas namely:

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1/ Appendix 3 includes details of the construction works to be carried out.

a) Technical Area

- It will be responsible for technical standardization as regards execution of the works and will supervise their execution.
- It will coordinate the equipment, assembly and operation of workshops with the provincial agencies.
- It will approve the planning of tasks in the field to be presented by the provincial sanitation agencies.
- It will maintain information records and control the progress of the works.

b) Training Area

The National Technical Education Council will be responsible for the coordination and supervision of the training aspects relating to the project. In addition it will directly coordinate the conduct of the censuses by the community leaders.

c) Administrative-Accounting Area

It will be responsible for the general accounting of the subproject and will provide administrative-accounting standards, will be responsible for the funds corresponding to national contributions and the contribution of the Social Progress Trust Fund. It will be responsible for the corresponding audits.

2. At the Provincial Level. The Environmental Health Directorates of the provinces of Catamarca and La Rioja will be responsible, each within its own jurisdiction, for the activities resulting from the subprojects.

These agencies will be responsible for the following:

- a) To plan activities in the field.
- b) To take part in the socio-economic survey, promotion and health education of the community and its organization.
- c) To administer the funds they receive for the conduct of activities within their area of jurisdiction.
- d) To direct the equipping, assembly and operation of the workshops supporting the subprogram.
- e) To carry out the project and be responsible for the management and execution of the works.

3. At the Administrative Level. Community bodies that can serve the purposes of the project will be organized and subsequently will expand their activities once the project is completed, to other health and welfare purposes. Bodies already established for other purposes can be used and can be adapted to the proposal.

For the purposes of this project the community organizations should be capable of the following:

- a) To disseminate and promote the health improvement of rural housing through self-help and mutual aid of the population.
- b) To receive and grant subsidies for works for the sanitary of rural housing.
- c) To receive grants and repay loans for the same purposes.

For the organization of these bodies, collaboration will be received from the social promotion working groups assigned to the subproject by the national and provincial levels as well as advisory services from other competent institutions.

Through the Coordinating Unit of the Subprogram mentioned earlier in this plan the National Sanitation Directorate will enter into agreements with the National Technical Education Council and the authorities of the provinces of La Rioja and Catamarca defining the responsibilities of the various parties in the execution of the operation.

#### 4. Justification

The geographical area of the country selected for the execution of the subproject has a certain geographical unity in that its socio-economic characteristics and the quality of the housing there are similar. The per capita GDP in the province of La Rioja is US\$310 per annum. The GDP of the province represents 0.2% of the national GDP and the province ranks 20th out of the 24 jurisdictions of the country (federal capital, 22 provinces and one national territory). As regards this indicators Catamarca ranks 22nd with a GDP/h of US\$293 and the province contributes 0.3% of the GDP of the country. In both provinces the greatest productive capacity is concentrated in the capital city, 48,309 out of the 136,237 inhabitants

of La Rioja (1970 census) live in the capital and in Catamarca 58,186 out of 172,323 inhabitants live in the capital. While the literacy rate for the country is 8.4%, in Catamarca it is 13.6% and in La Rioja, it is 11.9%.

In the areas selected the annual per capita income is US\$50.

These areas have been selected because of the high Chagas disease morbidity rate in these departments, a situation that is aggravated by the low income of the population and the lack of advice on the sanitation of housing.

Furthermore, the Chagas Disease Control Campaigns in the provinces have demonstrated a high degree of clinical effectiveness in treating the infected population and in identifying the areas in which the disease is most endemic in the province.

The purpose of the program is to achieve, within a period of five years, beginning in 1977, the definite establishment of the operating infrastructure in each province for the conduct of these activities, including the necessary financial resources by establishing in each jurisdiction a provincial revolving fund for that purpose. In the same period the target for construction works has been estimated at 20,000 houses to be benefited by housing sanitation works. Subsequently, it is intended to accelerate the achievement of the annual targets through capital rotation.

For the National Sanitation Directorate the cost of this program was US\$1,500,000 in 1977, US\$1,800,000 in 1978 and a similar investment in the amount of US\$2 million is scheduled for 1979.

##### 5. Cost and Financing

The contribution of the Bank to the Subproject would be the equivalent of US\$2 million in Argentine pesos.

A breakdown of the costs and financing is shown below:

FINANCING AND COSTS

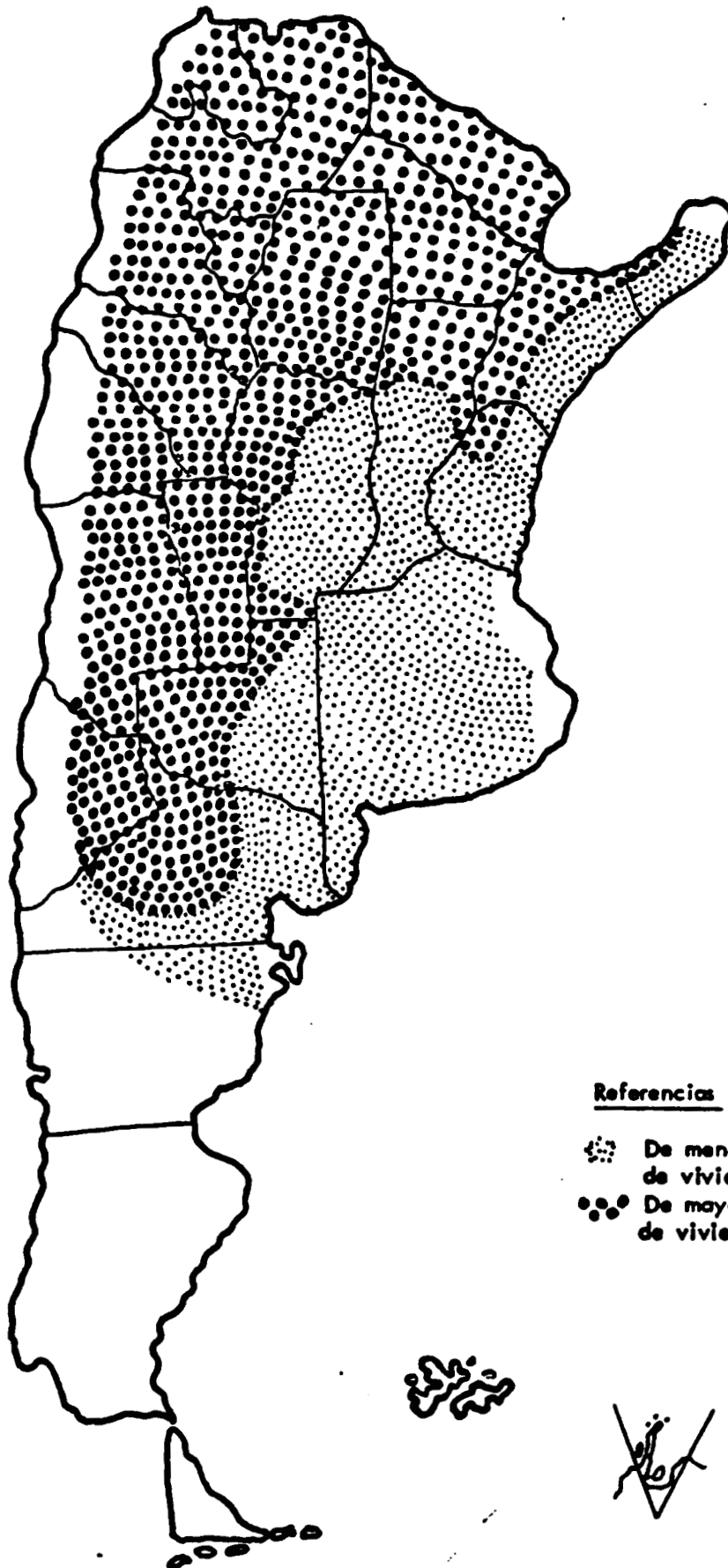
	<u>Bank</u> <u>SPTF</u>	<u>Sanitation</u> <u>Directorate</u>	<u>Provincial</u> <u>Government</u>	<u>CONET</u>	<u>Total</u>
Procurement of mobile units and transportation	250,000	-	-	-	250,000
Procurement of equipment, tools and materials	250,000	250,000	-	-	500,000
Salaries of instructors and supervisors	-	-	-	350,000	350,000
Economic assistance to com- munities during execution of works	-	-	400,000	-	400,000
Procurement of materials for roofs, floors, latrines, walls, doors and windows	1,500,000	1,750,000	-	-	3,250,000
TOTAL	2,000,000	2,000,000	400,000	350,000	4,750,000

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**APPENDIX I**

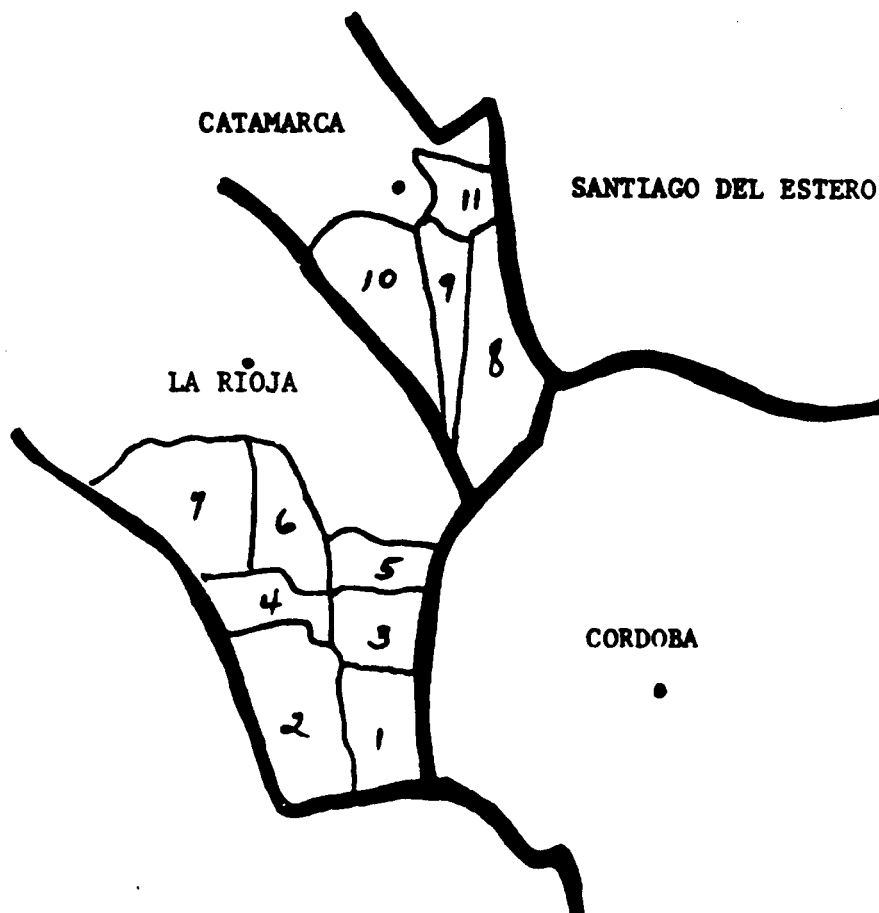
**M A P S**

DISTRIBUCION DEL TRIATOMA INFESTONS - ARGENTINA



Referencias

- De menor infestación de viviendas
- De mayor infestación de viviendas



DEPARTAMENTOS

LA RIOJA

1. Gral. San Martín
2. Rosario V. Peñalosa
3. Gral. Ocampo
4. Gral. Quiroga
5. Gral. Belgrano
6. Gral. Peñalosa
7. Independencia.

CATAMARCA

8. La Paz
9. Ancasti
10. Capayan
11. El Alto

— LIMITES PROVINCIALES

• CAPITAL DE PROVINCIA



FUENTE: Zelodon P.: "Los vectores de la Enfermedad de Chagas en América Latina", Es. As., 1972

## APPENDIX II

### Detalle Estadístico de las Zonas a ser cubiertas por el Programa

#### PROVINCIA DE CATAMARCA

#### INFORMACION BASICA

##### DEPARTAMENTO DE ANCASTI

1.	Superficie	2.412 Km2
2.	Población	2.240
2.1.	Población Urbana	0
2.2.	Población Rural	2.240
3.	Densidad de Población	0,9/Km2
4.	Número de Viviendas	741
5.	Viviendas a reacondicionar	150

##### DEPARTAMENTO DE TAPALLAN

1.	Superficie	4.284 Km2
2.	Población	8.292
2.1.	Población Urbana	6.136
2.2.	Población Rural	1.156
3.	Densidad de Población	1,9/Km2
4.	Número de Viviendas	2.498
5.	Viviendas a reacondicionar	600

##### DEPARTAMENTO DE EL ALTO

1.	Superficie	2.327 Km2
2.	Población	3.489
2.1.	Población Urbana	0
2.2.	Población Rural	3.489
3.	Densidad de Población	1,5/Km2
4.	Número de Viviendas	1.207
5.	Viviendas a reacondicionar	400

##### DEPARTAMENTO DE LA PAZ

1.	Superficie	6.514 Km2
2.	Población	12.261
2.1.	Población Urbana	8.215
2.2.	Población Rural	4.046
3.	Densidad de Población	1,9/Km2
4.	Número de Viviendas	2.610
5.	Viviendas a reacondicionar	900

**Detalle Estadístico de las Zonas  
a ser cubiertas por el Programa**

**PROVINCIA DE LA RIOJA**

**INFORMACION BASICA**

**DEPARTAMENTO GENERAL BELGRANO**

1. Superficie	2.288 Km2
2. Población	5.102
2.1. Población Urbana	0
2.2. Población Rural	5.102
3. Densidad de Población	2,2/Km2
4. Número de Viviendas	1.297
5. Viviendas a reacondicionar	570

**DEPARTAMENTO GENERAL OCAMPO**

1. Superficie	2.600 Km2
2. Población	5.389
2.1. Población Urbana	2.216
2.2. Población Rural	3.173
3. Densidad de Población	2,4/Km2
4. Número de Viviendas	1.521
5. Viviendas a reacondicionar	530

**DEPARTAMENTO GENERAL JUAN FACUNDO QUIROGA**

1. Superficie	3.490 Km2
2. Población	3.732
2.1. Población Urbana	0
2.2. Población Rural	3.732
3. Densidad de Población	0,3/Km2
4. Número de Viviendas	794
5. Viviendas a reacondicionar	600

**DEPARTAMENTO GENERAL ANGEL VICENTE PEÑALOZA**

1. Superficie	2.780 Km2
2. Población	2.556
2.1. Población Urbana	0
2.2. Población Rural	2.556
3. Densidad de Población	0,8/Km2
4. Número de Viviendas	507
5. Viviendas a reacondicionar	300

## APPENDIX III

### Technical specifications

#### 1) Foundations

They will be laid with rubble and mortar or else with soil cement and rubble stone or rubble.

#### 2) Base bond

A base bond will be laid to absorb differentiated settlements of the soil and will be executed with a concrete beam 20 cm long and metal frame.

#### 3) Waterproofing course

Over the bond a waterproofing course of cement mortar or bitumenous material will be laid.

#### 4) Hollow cement blocks or common bricks whose size is compatible with the bearing capacity, laid with mortar.

#### 5) Lintel and roof covering band

At the height of the lintels and the roof a bond similar to that of the base will be placed.

#### 6) Roofs

According to the characteristics of each area and of the materials available they will consist of:

- a) Hollow reinforced concrete slab with ceramic brick.
- b) Roof consisting of pre-stressed concrete joists and concrete bricks molded by semi-automatic machine.
- c) Coverings of metal or asbestos cement sheets with resistant structure consisting of pre-stressed or vibrated concrete wood or iron framing.
- d) Self-bearing reinforced concrete using recoverable metal forms.

#### 7) Coverings

Coverings of bitumenous material with fiber weft finished with layer of reflecting paint.

#### 8) Floors

They will be smooth and easily washable; earth floors will be eliminated; low cost materials will be used such as smooth cement or pressed floor tiles.

9) Wall bases

They will be of the same material as the floors and firmly fixed to the walls.

10) Ceilings

They will be continuous in order to prevent cavities.

11) Paint

The parameters will be white-washed as will be the ceilings, while oil paint and rust resistant paint will be used for windows and doors according to the materials they are made of.

12) Sanitary installations

a) Project

The installations will be of concentrated design in order to prevent excessive length of piping.

The water supply will be adapted to the needs of the families. Excreta disposal will be hygienic and continuous and contamination of surfaces in static drains will be avoided.

The walls of the bathrooms will have smooth surfacings or surfacings of waterproof plaster to a height decided upon by the provincial agencies.

b) Dynamic sewer systems

Minimum service

It will consist of a toilet, wash hand basin, shower and kitchen sink.

Technical standards

Those established by the Obras Sanitarias de la Nación.

Materials

The cheapest materials in the area will be used provided they are among those approved by the OSN.

c) Static sewer system

Minimum service

It will consist of a latrine, shower and sink.

Technical standards

The provincial agencies will issue regulations covering the construction of latrines and drainage systems (septic tanks, cesspools, nitrification field, etc.). Internal installations will be adjusted to OSN standards.

d) Water supply

Technical standards and materials in accordance with SNAP regulations.

Without water supply

The provincial agencies will issue regulations covering the construction of wells, intakes, etc. and the selection of the corresponding equipment.

Water quality and the analysis to be made will be taken into account. Regulations will be issued covering the treatment to be carried out in the houses to improve water quality.

### III. ARGENTINE HEMORRHAGIC FEVER CONTROL PROGRAM

#### A. Background

It is an acute virus disease that affects a vast area of the humid pampa, the most densely populated and the largest agricultural region of the Republic. The agent is a virus (Junin) which is found in field rodents in the endemoepidemic area. Similar viruses have been found in Bolivia (Bolivian hemorrhagic fever) and in certain regions of Africa (Lassa fever).

The disease is produced directly or indirectly from the infected environment either by direct contact or by inhalation. Most of the patients are rural dwellers or persons having contact with rural dwellers. The disease is more frequent in males, especially in the age group 16-60 years, which indicates that the disease is contracted in the fields among migrant workers during harvesting.

The most important characteristics of the disease is its gradual geographical spread. In 1958 the endemo-epidemic area was limited to an area in the northwestern part of the province of Buenos Aires, an area of 16,000 km<sup>2</sup> with 270,000 inhabitants. Beginning in that year it expanded in waves toward the north and the west. By 1976 it was present in an area of around 100,000 km<sup>2</sup> and the population infected numbered approximately 1,200,000. The region involved is the northwestern part of the province of Buenos Aires and the southern part of the province of Cordoba and Santa Fe and the northwestern part of the province of La Pampa.

Epidemic outbreaks occur especially at the end of summer and in the autumn during the corn, sorghum, soybean and corn flower seed harvest. Registration of patients is unreliable, since epidemiological surveillance is unsatisfactory and there is a lack of diagnostic facilities. Nevertheless, around 20,000 cases have been detected in the region. Case specific mortality ranges from 10 to 20% and the only known effective treatment is the serum of persons that have had the disease.

The Government has established the National Institute for The Study of Hemorrhagic Virus Diseases in the city of Pergamino in the province of Buenos Aires, which is located in the endemico-epidemic area.

There is no effective vaccine but research is being carried out with the aim of producing one.

#### B. Objectives of the Project

##### 1. General Objectives

To establish a system of epidemiological surveillance with the aim of limiting the spread of the disease and attempting to control it and, if possible, to eradicate it.

## 2. Specific objectives

- a) Diagnosis and early treatment of patients.
- b) Education of the affected population as regards methods and means of prevention during harvesting and other agricultural activities.
- c) Preparation and control of antigens, antisera and reagents necessary for virological diagnosis.

## C. Project description

### General

It will consist of the diagnosis and early treatment of patients; health education campaigns; and the collection of plasma from convalescents for appropriate treatment.

### Activities to be carried out

- a) Establishment of 5 additional convalescent plasma banks in strategic places in the four provinces in order to ensure that plasma is available for all patients, whether hospitalized in private or public institutions. The 11 plasma banks will be located in the following localities: in the province of Buenos Aires: 1) Pergamino, 2) Junín and 3) Azul. In the province of Santa Fe: 1) Rosario, 2) Villa Canas (New) and 3) Alcorta. In the province of Córdoba: 1) Córdoba (New), 2) Villa María (New) 3) Labonlaye (New) and 4) Laborde (New). In the province of La Pampa: 1) General Pico.
- b) To diagnose and begin treatment of patients at an early and appropriate stage, for which purpose booklets, slides and films will be distributed covering the clinical and epidemiological characteristics of the disease and standards for diagnosis and treatment. This campaign will be directed to physicians and biochemists in the endemic area.
- c) Continuing education campaigns consisting of the production and distribution of booklets, posters, slides, films, radio and television broadcasts aimed at informing the population about the characteristics of the disease and measures for preventing it.

### Location of the project

The activities will be centralized in the National Institute for Studies on Hemorrhagic Diseases. The convalescent plasma banks will be established in the places specified in 3.02(a) since all are areas in which the disease is prevalent. Education programs will also be carried out in primary and secondary schools in the region in order to disseminate a knowledge of the disease as widely as possible.

D. Operating structure and executionOperating structure

The program will be carried out by the National Institute for Studies on Hemorrhagic Virus Diseases, which is under the authority of the National Directorate for Institutes and Research, a unit of the Office of the Secretary for Health of the Ministry of Social Welfare. (See organization chart in Appendix 1).

Execution

The program is expected to be carried out in a period of four years, for which purpose each center will be provided with the following staff: 5 professionals of which two will be physicians; seventeen technical personnel; two administrative officers, and eleven auxiliary personnel.

Description of the executing agencies

The National Institute for Studies on Hemorrhagic Virus Diseases consists of 4 departments: clinical and epidemiology, administration and general services, research and teaching, and production.

Continuity of the project

The Office of the Secretary for Public Health will continue the program until the disease is completely controlled and will maintain ongoing epidemiological surveillance in the endemic areas.

E. Justification

The Government has assigned importance to this program and in the last three years has invested the following funds in it:

Funds assigned in the last three years by the Office of the Secretary of State for Public Health to the National Institute for Studies on Hemorrhagic Virus Diseases (\*)

	<u>1976</u>	<u>1977</u>	<u>1978</u>
Thousands of pesos	9,020,100	14,029,600	211,016,470
Dollars (U.S.)	33,408	35,074	388,770
Dollar/pesos exchange rate	270	400	800
Real increase in budget	1	1.05	1.16

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(\*) The Institute was established on March 21, 1978 by Decree No. 663 of the National Executive.

It is believed that the proposed program could control and reduce the incidence and extent of these diseases. In addition, Bolivian professionals will be invited to observe the conduct of the program for a certain specified period and to undergo training in diagnostic and treatment methods. Since similar methods are used, the Institute will serve as an international center on virus diseases in general and hemorrhagic diseases in particular.

#### Identification of beneficiaries

The disease affects rural dwellers with low socio-economic standards since they are migrant workers. The rodent is not domesticated and does not enter the houses, hence the enormous preponderance of male patients. More than 80% of the patients are low income persons; they are corn harvest workers from the poorest provinces in the country (Santiago del Estero, Tucumán, La Rioja, Chaco and Entre Rios) and low-income workers living in the endemo-epidemic area (day laborers and farm laborers). Mention may be made of the fact that whereas the per capita GDP for Argentina in 1977 was 2,070 pesos monthly, the average income of day laborers or farm laborers was 1,000 pesos.

#### Justification of the technology proposed

As is well known, diagnosis and early treatment with convalescent plasma improves the prognosis in hemorrhagic fever; therefore campaigns to collect plasma and to train physicians in the areas in diagnostic and treatment methods is the best way of controlling this disease.

#### F. Cost of financing

##### Cost of the project

The total cost of the project is estimated at approximately US\$4,946,000 of which the Government of Argentina would contribute US\$3,946,000 and the IDB, US\$1 million. The distribution of the costs over the four year period is as follows:

**ARGENTINE HEMORRHAGIC FEVER**

**Costs of the Program**

(in US\$)

<u>Category</u>	<u>Year 1</u>		<u>Year 2</u>		<u>Year 3</u>		<u>Year 4</u>		<u>IDB</u>
	<u>IDB</u>	<u>Government</u>	<u>IDB</u>	<u>Government</u>	<u>IDB</u>	<u>Government</u>	<u>IDB</u>	<u>Government</u>	
	192,500	335,000	109,200	296,800	41,300	280,200	5,000	265,000	348,000
	120,000	580,000	120,000	580,000	120,000	580,000	120,000	580,000	480,000
allowances	20,000	40,000	20,000	40,000	20,000	40,000	20,000	40,000	80,000
ties	33,000	77,000	25,000	73,000	19,000	70,000	15,000	69,000	92,000
al	365,500	1,032,000	274,200	989,800	200,300	970,200	160,000	954,000	1,000,000

G. Evaluation criteria

At least once a year information on the following will be provided:

- a) The number of cases diagnosed and of patients treated with convalescent plasma.
- b) The amount of plasma collected, compared with the targets established and earlier years.
- c) Conduct of educational campaigns both for professionals and for the public, including quantitative data on films, talks and other work done.

IV LEPROSY CONTROL PROGRAMA. Background

Leprosy is endemic in Argentina and is normally associated with poor communities.

Although records do not provide technically reliable information, there are estimated to be 15,000 known cases of leprosy in the country and the total number of cases is estimated at 22,000. This gives a rate of 10.8 per 10,000 population (1970); however, there are provinces in which the disease is concentrated. The estimated rates for the provinces with the highest leprosy prevalence are as follows:

<u>Province</u>	<u>Rate per 10,000 population</u>
Corrientes	44,31
Chaco	44,12
Formosa	34,17
Misiones	33,85
Entre Ríos	21,93
Santa Fé	21,07
Salta	11,12
Córdoba	9,70
Tucumán	7,00
Capital Federal	6.05
Santiago del Estero	5,94

In the other provinces the rates are 3.9 or lower. See map in Appendix 1.

Of the 15,000 known cases it is estimated that approximately 6,500 are being treated by the public sector; and 5,000 are not being supervised. In addition, there are 7,000 cases that are not registered.

Patients covered by the private sector are believed to be adequately treated, but their household contacts are not regularly examined.

In short, the disease is endemic in 10 of 23 provinces, the Federal Capital and Greater Buenos Aires and has attained dangerous levels there. 50% of the patients are of the lepromatous type i.e. may transmit the disease.

B. Objectives

- a. To protect the non-infected population
- b. To reduce the prejudice associated with the disease.
- c. To control the disease and possibly eradicate it.

Specific Objectives

- a. To detect at least 90% of the leprosy cases in the country, special attention being given to the forms that can transmit the disease.
- b. To ensure that all known patients that are not being treated by private physicians are given immediate, prolonged, regular and free treatment with the most suitable drugs.
- c. To prevent and treat the deformities caused by the disease.
- d. To examine the household contacts of all known cases, especially infectious cases, in order to detect and provide treatment for new cases.

C. Description of the Program

General

- a. To strengthen the diagnostic and treatment activities of existing treatment centers.
- b. To equip 12 fixed centers in areas in which coverage is insufficient and prevalence is high.
- c. To increase to 23 the number of mobile case detection teams. (at present there are 10).

Activities to be undertaken

- a. Establishment of the following new centers: 2 in Formosa and in Misiones, and 1 in Salta, Buenos Aires, Santa Fé, Corrientes, Santiago del Estero, Chaco and possibly two more in sites to be determined.
- b. Each mobile team will consist of a leprologist, a social worker, and a driver and will be provided with an appropriate vehicle. The team will visit the most affected population groups, which are those with the lowest socio-economic status, will detect and treat patients, and be responsible for the prophylactic and regular surveillance of household contacts and the detection of new cases by means of examinations of population groups.
- c. To discharge inactive patients.
- d. To carry out a health education campaign in the communities and provide them with information on standards of prevention and treatment.
- e. The targets expected to be reached are the following: to relocate approximately 5,00 patients at present not being supervised; to

detect approximately 7,000 unregistered patients of which it is estimated that 2,400 would be infectious; to provide regular treatment for a total of 13,500 patients; in the first two years of the program, to examine approximately 35,000 household contacts of known patients and subsequently approximately 27,000 contacts of cases at present not being supervised and of those to be detected.

- f. To organize a three-month training course for physicians from neighboring countries.

#### Location of mobile teams

The mobile units will be located in the three areas with the highest prevalence of the disease: the first comprises the provinces of Chaco, Corrientes, Formosa and Misiones; the second comprises Córdoba, Entre Ríos, Santa Fé, Tucumán, Salta and Santiago del Estero and the third, the Federal Capital and Greater Buenos Aires. The population, estimated number of cases, and rates in the three areas are shown in Appendix 2. There will be 10 mobile teams in Area 1, 10 in Area 2, and 3 in Area 3, a total of 23 in all.

#### D. Operating structure and execution

##### Operating structure

The program would have three operating levels: (1) central, directed by the National Institute of Public Health Dermatology, a unit of the Office of the Secretary for Public Health of the Ministry of Social Welfare; (2) regional, in the 3 regions already mentioned; (3) peripheral, at the provincial level, including static teams and mobile teams, see Appendix 3 for diagram of operations.

In the epidemic areas a static center will serve as the base for the operations of each mobile team.

##### Execution

13 new mobile units will be established (at present there are 10). Their functions will be as follows:

- a. To coordinate the activities of the fixed centers.
- b. To locate and verify patients not being supervised and as far as possible to ensure that subsequently they receive regular treatment.
- c. To detect new cases.
- d. To establish and maintain working relations with local physicians and leaders in order to obtain information and cooperation in the different activities of the program.

- e. To collect specimens and to make bacilloscopic examinations. To make lepromine tests (Fernandez and Mitsuda).
- f. To distribute drugs.
- g. To provide health education.
- h. To establish the indications for prevention and/or ambulatory treatment of deformities and to ensure that they are applied.
- i. To decide on in-patient treatment in special institutions for patients with serious complications or who need specialized treatment of their deformities.
- j. To be responsible for the household distribution of drugs when circumstances so require.

Beds in existing health institutions will be used for patients who:

- a. Are highly infectious.
- b. Have serious systemic symptoms that require intensive therapy;  
or
- c. Suffer from physical disabilities which prevent them from walking or interfere with walking.

In addition to the examination of household contacts in the areas in which the disease is most prevalent, lepromine tests (Fernandez and Mitsuda) tests will be made on a house-to-house basis for the purpose of diagnosis.

School-age children will be examined in the areas where the disease is highly prevalent (more than 30 per 10,000 population)..

Special groups of the population will be examined: pre-conscription; youths; workers in industrial plants; and persons coming from endemic areas or neighboring countries in which the disease is endemic.

#### Short description of the executing agencies

The National Institute of Public Health Dermatology, will be responsible for the execution of the program. This agency, which is a unit of the Office of the Secretary of Public Health, is responsible for drawing up the National Leprosy Control Plan; for preparing and permanently updating the register of leprosy patients and their contacts; for purchasing leprosy-specific drugs and medicaments.

#### Continuity of the program

The project would be continued by the Office of the Secretary of State for Public Health until the disease is completely controlled and possibly eliminated.

## E. Justification

### Short description of the sector

The health sector in Argentina is divided into a public subsector, which covers approximately 75% of the population, and a private subsector, which covers the remaining 25%. The Office of the Secretary for Public Health has begun this program with national funds. In 1976 the budgetary funds allotted amounted to approximately US\$55,000; in 1977, to US\$450,000; and in 1978, to US\$436,000.

### Justification of the technology proposed

The technology proposed is in accordance with the recommendations of the Fifth Report of the World Health Organization Expert Committee on Leprosy (WHO Technical Report Series No. 607, 1977).

## F. Cost and financing

The total cost of the project would be US\$3,684,433. The contribution of the Bank, which would be made over a period of 3 years, would be equivalent to US\$1,000,000 in Argentine pesos.

The local contribution would be charged to the national budget, with the exception of an item of US\$127,800 for five years financed by the Sociedad Alemana de Beneficiencia, a group of the Knights of Malta, and the Stanley Thomas Johnson Foundation.

### Impact of the program on the solution of the problem

A study on the employment, housing, education and income characteristics carried out in two cities in which the disease is prevalent: General Rodriguez and Canuelas, showed that the population could be divided into 5 levels, in which the various elements in each one of the levels was taken into account.

Level 1, with luxury housing, usually made up of persons with a high education level and incomes of \$M/N400,000 or more.

Level 2, consisting of persons with complete secondary education and good quality housing and a family income of \$M/N200,000-399,900.

Level 3, consisting of persons with unsatisfactory housing, heads of household without a complete secondary education and a family income of \$M/N100,000-199,900.

Level 4, in which the head of household had a complete or incomplete primary education; housing was unsatisfactory including overcrowding, and family income of \$M/N199,900 - \$M/N50,000.

Level 5, consisting of shantytowns surrounding the two cities, extremely poor quality housing; heads of household with little or no education, and a family income of less than \$M/N50,000.

A total of 135 leprosy patients were detected, distributed as follows: level 1, 0%; level 2, 2.9%; level 3, 13.3%; level 4, 39.3%; and level 5, 44.5%. In other words, levels 4 and 5 with incomes and very unsatisfactory housing accounted for 83% of the leprosy patients.

## VI. EVALUATION CRITERIA

The information at present available will be used as the baseline data. Annual evaluations will indicate the number of patients registered during the year; the number of patients newly diagnosed; the number of contacts examined; and the number of cases detected among contacts. In addition, the number of school children and other population groups examined will be given, as will be the corresponding findings. Data on the number of patients undergoing treatment and discharges during the year will also be summarized.